Sugar Bulletin, No. 21.

DEPARTMENT OF AGRICULTURE,
BRITISH GUIANA.

FIELD EXPERIMENTS WITH SUGAR CANE, XXI.

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XVIII.

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1952.

'LEAF SCALD' INVESTIGATION.

THE "DAILY CHRONICLE," LTD., GEORGETOWN, DEMERARA.
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FIELD EXPERIMENTS WITH SUGAR CANE, XXI.

BY

L. S. BIRKETT, *Sugar Agronomist,*

AND

C. CAMERON, *Field Manager.*

INTRODUCTION.

This paper summarises the results of 52 Field Experiments carried out during 1952. They consist of the following :—

Variety	.....	.....	45
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The weather during 1952, unlike the two previous years, may be considered normal. The total rainfall recorded at the Sugar Experiment Station for 1952 was 111.12 inches as against 140.28 inches in 1951, and 125.87 inches in 1950. Compared with 1951, the rains during the first half of 1952 were not as heavy but the rainfall for the second half was about the same, largely owing to the heavier rainfall in November and December which totalled 27.31 inches in 1952 as against 8.37 inches for the same period in 1951.

The monthly distribution of the rainfall in 1952 is compared with the monthly averages for the period 1921-1952 in Table I.

TABLE I.—**Comparison of January—December Rainfall at Sophia Sugar Experiment Station for 1952 with the Average for 1921—1952.**

Month.	Actual Rainfall, 1952. Inches.	Average Rainfall, 1921--1952. Inches.	Excess or Deficit, Inches.
January 1952	15.19	10.38	4.81
February ,,	4.36	4.94	- .58
March ,,	.24	4.54	-4.30
April ,,	7.25	6.52	.73
May ,,	11.16	12.69	-1.53
June ,,	20.75	15.10	5.65
July ,,	13.71	11.91	1.80
August ,,	8.11	7.56	.55
September ,,	2.61	2.89	- .28
October ,,	.43	3.85	3.42
November ,,	10.27	5.85	4.42
December ,,	17.04	14.31	2.73
Total	111.12	100.54	10.58

VARIETY TRIALS.

The results of the 1952 series of variety trials are presented and discussed under the following sub-heads :—

(a) Variety Sorting Trials ;

(b) Plant cane variety trials ;

(c) First Ratoon variety trials ;

(d) Second Ratoon variety trials ;

(e) Variety Performance Summary ;

(f) General Summary and Recommendations.

SUB-SECTION A.—VARIETY SORTING TRIALS.

Two Variety Sorting Trials were reaped as Plants in 1952. They consist mainly of the Barbados 1947 series. One was planted at the Sugar Experiment Station on Frontland Clay and the other at Pln. Uitvlugt on Pegassy Clay.

The Sorting Trials of the Barbados 1945 and 1946 series were also reaped as 1st Ratoons—two in field 13 East "A" and 13 East "B", Sophia, and one at 13 W. Tuschen.

The more promising varieties indicated by these trials are being tested in large-scale field trials.

The results of the three series *e.g.* 1945, 1946 and 1947 are Summarised in Table II and are classified according to soil type and locality as follows :—

Soil Type & Locality.	*Index Nos. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	1, 3 & 4	3
Pegassy Clay	2 & 5	2

TABLE II.—**Results of a Plant Cane "Variety Sorting" Trial on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre,		Trial No.
					Tons.	% Mean.	
	Sophia, Field 5 West, Reaped 17.iv.52 at 13.00 months. Rainfall:—102.99 inches.						
	B.S. 4733	55.36	13.90	89.6	7.69	131.23	
	*B. 34104	50.20	14.86	87.4	7.46	127.30	
	*B. 41227	50.62	14.58	87.0	7.38	125.94	
	B. 46378	52.15	14.11	87.7	7.36	125.60	
	B. 46232	49.39	14.85	81.5	7.34	125.26	
	B. 47306	50.65	13.85	82.4	7.01	119.62	
	B. 47419	48.46	13.93	89.0	6.75	115.19	
	B. 45137	48.77	13.79	90.7	6.72	114.68	
	B.S. 4711	46.02	14.48	86.8	6.66	113.65	
	B. 47256	51.27	12.73	83.7	6.53	111.43	
	B. 47204	43.85	14.72	86.1	6.46	110.24	
	B.S. 4747	46.47	13.56	85.9	6.30	107.51	
	B. 47135	44.95	13.78	88.2	6.19	105.63	
	B. 4755	48.11	12.61	86.0	6.07	103.58	
	B. 47147	50.78	11.78	80.4	5.98	102.05	
	B.S. 4724	41.96	13.97	82.9	5.86	100.00	
	B. 47179	48.19	12.15	83.8	5.85	99.83	
	B. 4788	42.07	13.74	83.0	5.78	98.63	
	B. 47217	43.95	12.87	87.6	5.66	96.59	
MEANS OF 4 PLOTS.	B. 47151	51.63	10.85	79.1	5.60	95.56	1
	B. 47162	42.45	13.08	86.6	5.55	94.71	
	B. 47258	45.19	12.13	86.8	5.48	93.52	
	B. 47379	40.91	13.28	88.9	5.43	92.66	
	B. 4764	38.48	14.01	85.8	5.39	91.98	
	B. 4530	40.70	13.25	85.0	5.39	91.98	
	B. 4504	35.57	14.90	89.9	5.30	90.44	
	B. 47214	39.85	13.01	88.1	5.18	88.40	
	B.S. 4710	43.24	11.98	80.7	5.18	88.40	
	B.S. 4743	34.71	14.72	88.1	5.11	87.20	
	B. 4765	37.23	13.73	87.9	5.11	87.20	
	B. 47314	38.00	12.81	89.7	4.87	83.11	
	B. 47397	40.49	11.99	80.2	4.85	82.76	
	B. 47262	43.09	11.16	83.3	4.81	82.08	
	B. 47298	37.53	12.42	84.3	4.66	79.52	
	B.S. 4738	35.59	12.59	87.0	4.48	76.45	
	B. 4688	24.33	13.89	90.5	3.38	57.68	
	Mean :				5.86	100.00	
	Significant Difference, 20:1:				1.37	23.38	

* **Standard Canes.**

TABLE II.—**Results of a Plant Cane "Variety Sorting" Trial on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre,		Trial No.
					Tons.	% Mean.	
	Pln. Uitvlugt, Field 91 M.Z. West, Reaped 28.iii.52 at 12.75 months. Rainfall:—127.96 inches.						
	B. 47225	36.43	17.83	90.3	6.49	184.90	
	B. 4755	36.00	16.76	91.4	6.03	171.79	
	B. 47379	41.76	13.87	86.2	5.79	164.96	
	B. 47258	31.16	16.96	88.8	5.28	150.43	
	B. 47256	40.09	13.15	83.8	5.27	150.14	
	B. 46378	36.00	14.25	88.2	5.13	146.15	
	B. 47147	33.75	14.75	86.8	4.98	141.88	
	B. 47298	27.24	17.38	89.9	4.73	134.76	
	B. 47214	31.54	14.64	87.9	4.61	131.34	
	B. 47216	31.09	14.56	87.7	4.52	128.77	
	B. 45137	31.59	14.28	79.5	4.51	128.49	
	*B. 41227	26.51	16.77	90.1	4.45	126.78	
	B.S. 4733	25.99	14.93	87.7	3.88	110.54	
	B.S. 4746	20.11	17.47	84.9	3.51	100.00	
	B. 47419	20.54	16.75	91.0	3.44	98.01	
	B.S. 4724	20.13	16.67	87.6	3.36	95.73	
	B. 47306	22.74	14.68	85.2	3.34	95.16	
	B. 4765	18.26	18.26	90.0	3.33	94.87	
	B.S. 4710	23.15	14.13	86.4	3.27	93.16	
MEANS OF 4 PLOTS.	B. 47179	23.28	14.01	84.6	3.26	92.88	2
	B. 47162	21.99	14.74	87.9	3.24	92.31	
	B.S. 4743	22.77	14.10	83.5	3.21	91.45	
	B. 47151	18.15	15.56	85.8	2.82	80.34	
	B. 4781	16.50	16.78	85.8	2.77	78.92	
	B.S. 4711	16.82	15.77	89.2	2.65	75.50	
	B. 47314	16.04	16.35	90.2	2.62	74.64	
	B. 4788	13.84	18.12	91.2	2.51	71.51	
	B. 46339	14.77	17.02	93.6	2.51	71.51	
	B. 47135	15.96	15.45	88.3	2.47	70.37	
	B. 47262	14.49	15.69	86.5	2.27	64.67	
	B. 4764	13.87	15.63	82.2	2.17	61.82	
	B. 4530	16.63	11.34	79.5	1.89	53.85	
	B. 47399	11.61	15.60	88.2	1.81	51.57	
	B.S. 4747	9.66	15.04	85.6	1.45	41.31	
	B. 47204	9.88	14.59	86.3	1.44	41.03	
	B.S. 4744	19.06	14.31	88.3	1.44	41.03	
	Mean:				3.51	100.00	
	Significant Difference, 20:1:				1.35	38.46	

* **Standard Canes.**

TABLE II.—**Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 13 East "B." Reaped 27.viii.52 at 13.25 months. Rainfall:—114.37 inches.								
	B. 46218	33.71	15.84	89.9	5.34	126.84	B. 46290	13.00	
	B. 46290	40.52	13.00	87.0	5.26	124.94	B. 4699	12.36	
	B. 46369	34.98	13.47	89.2	4.71	111.88	B. 46351	12.36	
	B. 46351	32.03	14.32	87.4	4.58	108.79	B. 41227	12.07	
	B. 46230	34.35	13.26	86.5	4.55	108.08	B. 46218	11.99	
	B. 46102	34.62	13.06	89.3	4.52	107.36	B. 46230	11.87	
	B. 46399	38.59	11.58	85.6	4.47	106.18	B. 46369	11.54	
	B. 4699	31.71	13.62	85.9	4.32	102.61	B. 46384	11.52	
	B. 4688	34.95	12.14	83.4	4.24	100.71	B. 46399	11.40	
MEANS OF 4 PLOTS:	*B. 41227	32.42	12.95	88.0	4.20	99.76	B. 4596	11.34	
	B. 4534	29.22	13.98	86.7	4.08	96.91	B. 4688	11.20	
	B. 46384	33.69	11.99	86.5	4.04	95.96	B. 46102	11.09	3
	B. 4596	27.21	13.90	85.8	3.78	89.79	B. 46144	10.79	
	B. 4506	31.79	11.78	86.3	3.74	88.84	B. 4534	10.61	
	B. 46297	29.30	12.51	84.2	3.67	87.17	B. 4506	10.60	
	B. 4604	35.54	10.22	78.2	3.63	86.22	B. 4604	10.33	
	B. 46394	24.38	14.58	87.8	3.55	84.32	B. 46394	10.32	
	B. 46144	25.45	12.43	87.4	3.16	75.06	B. 46297	9.49	
	Mean:				4.21	100.00			
	Significant Difference, 20:1:				.99	23.52			
	Sophia, Field 13 East "A." Reaped 30.viii.52 at 13.25 months. Rainfall:—113.66 inches.								
	B. 46378	48.65	14.22	89.2	6.92	137.30	B. 46378	16.83	
	M. 213/40	46.47	13.38	88.3	6.22	123.41	B. 46340	14.80	
	B. 46190	42.86	14.44	84.3	6.19	122.82	B. 45270	14.00	
	M. 423/41	42.68	14.15	88.9	6.04	119.84	M. 423/41	13.79	
	B. 45188	40.86	14.33	89.9	5.86	116.27	M. 213/40	13.75	
	*B. 41227	45.64	12.61	83.0	5.75	114.09	B. 45188	13.31	
	B. 45270	41.73	13.22	85.8	5.52	109.52	B. 45151	13.26	
	B. 46136	38.77	13.41	85.5	5.20	103.17	B. 46103	13.04	
	B. 46281	41.97	11.99	82.1	5.03	99.80	B. 41227	12.90	
	B. 46103	39.70	12.43	88.3	4.94	98.02	B. 46281	12.80	
	B. 46340	38.09	12.94	87.0	4.93	97.82	B. 4691	12.67	
	B. 46248	35.77	13.29	88.7	4.75	94.25	B. 4553	12.58	
MEANS OF 4 PLOTS:	B. 45274	38.74	12.14	86.3	4.70	93.25	B. 46190	12.46	4
	B. 4691	39.84	11.77	83.4	4.69	93.06	B. 46248	12.43	
	B. 45151	35.71	13.04	87.1	4.65	92.26	B. 46136	12.24	
	B. 4553	32.95	13.77	83.6	4.54	90 08	B. 45274	12.13	
	B. 46151	33.86	13.02	88.5	4.41	87.50	B. 4572	11.69	
	B. 4668	34.69	12.66	83.9	4.39	87.10	M. 134/32	11.30	
	B. 4572	30.56	13.76	88.8	4.20	83.33	B. 4668	10.94	
	M. 134/32	33.66	11.65	82.0	3.92	77.78	B. 46151	10.65	
	B. 4504	30.45	10.10	88.6	3.07	60.91	B. 4504	9.43	
	Mean:				5.04	100.00			
	Significant Difference, 20:1:				1.47	29.17			

* **Standard Canes.**

TABLE II.—**Results of a First Ratoon "Variety Sorting" Trial on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Pln. De Kinderen, Field 13W. Tuschen, Reaped 19.viii.52 at 11.75 months. Rainfall:—93.05 inches.								
MEANS OF 4 PLOTS:	B. 46290	33.08	15.16	89.1	5.01	130.47	B. 46369	11.71	5
	B. 4688	33.95	13.50	87.9	4.58	119.27	B. 45151	10.67	
	B. 46351	32.85	13.73	89.1	4.51	117.45	B. 46351	10.66	
	B. 46369	31.04	14.21	89.9	4.41	114.84	B. 46378	10.37	
	B. 45151	27.07	16.23	89.3	4.39	114.32	B. 46290	10.35	
	B. 46378	30.34	14.39	89.6	4.36	113.54	B. 46102	9.87	
	*B. 41227	31.46	13.84	86.6	4.35	113.28	B. 4699	9.66	
	B. 46102	27.71	15.15	88.5	4.20	109.37	B. 41227	9.57	
	B. 46297	24.56	16.07	90.3	3.94	102.60	B. 46297	9.18	
	B. 4699	24.24	16.07	89.7	3.89	101.30	B. 46151	8.67	
	B. 46151	20.48	15.96	89.9	3.27	85.16	B. 4688	8.61	
	B. 46394	22.50	14.47	89.1	3.26	84.90	B. 46394	8.59	
	B. 46340	18.60	14.18	88.0	2.63	68.49	B. 4668	7.83	
	B. 46281	18.77	13.17	87.1	2.47	64.32	B. 46340	7.80	
	B. 4668	18.97	12.44	85.5	2.36	61.46	B. 46281	7.41	
	Mean:				3.84	100.00			
	Significant Difference, 20:1:				.94	24.48			

*** Standard Cane.**

SUB-SECTION B.—PLANT CANE VARIETY TRIALS.

Seventeen variety trials were reaped at the plant-cane stage during 1952. They are classified according to soil type and locality as follows :—

Soil Type & Locality.	*Index Nos. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	6—16	11
Berbice Frontland Clay	17—19	3
Riverside Clay	20—21	2
Pegassy Clay	22	1

TABLE III.—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Sophia, Field 16 East "B." Reaped 24.iii.52 at 15.25 months. Rainfall:—163.60 inches.						
MEANS OF 4 PLOTS:	*B. 41227	46.83	15.82	89.3	7.41	116.33	6
	D. 18/45	45.49	16.20	92.0	7.39	116.01	
	D. 94/45	39.74	16.70	93.1	6.64	104.24	
	D. 87/45	43.05	15.32	85.7	6.59	103.45	
	D. 56/45	37.18	17.52	92.1	6.51	102.20	
	D. 43/45	45.06	14.22	87.9	6.40	100.47	
	D. 19/45	39.58	15.99	90.7	6.33	99.37	
	D. 8/45	40.99	14.12	83.6	5.79	90.89	
	D. 30/45	36.08	16.00	90.0	5.77	90.58	
	D. 14/45	35.07	13.92	86.8	4.88	76.61	
	Mean:				6.37	100.00	
	Significant Difference, 20: 1:				1.13	17.74	
	Sophia, Field 16 East "A." Reaped 29.iii.52 at 15.50 months. Rainfall:—163.36 inches.						
MEANS OF 4 PLOTS:	*B. 41227	52.34	16.04	89.7	8.39	136.64	7
	B. 40105	39.66	16.33	90.1	6.47	105.37	
	B. 44111	39.01	15.68	88.3	6.11	99.51	
	B. 44182	36.66	15.45	87.2	5.66	92.18	
	D. 3/44	35.68	15.27	88.9	5.45	88.76	
	D. 123/45	41.53	11.51	86.7	4.78	77.85	
	Mean:				6.14	100.00	
	Significant Difference, 20: 1:				1.69	27.52	
	Sophia, Field 10 East "B." Reaped 5.iv.52 at 10.50 months. Rainfall:—84.50 inches.						
MEANS OF 4 PLOTS:	D. 17/46	32.16	15.61	86.5	5.02	114.61	8
	*B. 41227	35.64	13.76	89.9	4.90	111.87	
	D. 133/46	34.59	13.88	87.9	4.80	109.59	
	D. 245/46	28.83	14.71	86.9	4.24	96.80	
	D. 18/46	31.81	13.24	87.0	4.21	96.12	
	D. 139/46	24.38	15.50	86.4	3.78	86.30	
	D. 244/46	25.11	14.84	85.9	3.72	84.93	
	Mean:				4.38	100.00	
	Significant Difference, 20: 1:				.92	21.00	
	Sophia, Field 10 East "A." Reaped 8.iv.52 at 11.00 months. Rainfall:—84.39 inches.						
MEANS OF 3 PLOTS:	*B. 41227	35.34	14.80	89.2	5.23	114.69	9
	D. 233/46	35.50	14.48	85.6	5.14	112.72	
	D. 238/46	30.85	16.17	85.9	4.99	109.43	
	D. 20/46	32.92	13.70	88.0	4.51	98.90	
	D. 180/46	32.01	13.89	88.5	4.44	97.37	
	D. 146/46	28.68	15.23	90.9	4.37	95.83	
	D. 119/46	26.44	15.86	86.5	4.20	92.11	
	D. 177/46	27.27	15.05	87.0	4.10	89.91	
	D. 162/46	27.56	14.85	88.2	4.09	89.69	
	Mean:				4.56	100.00	
	Significant Difference, 20: 1:				—	—	

* **Standard Cane.**

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Sophia, Field 10 West "A." Reaped 24.iv.52 at 12.25 months. Rainfall:—118.78 inches.						
MEANS OF 4 PLOTS:	B. 46232	56.30	15.50	87.2	8.73	115.63	10
	B. 46369	57.87	13.89	83.5	8.04	106.49	
	B. 46351	54.34	13.62	83.8	7.40	98.01	
	B. 46297	55.64	13.22	85.0	7.35	97.35	
	*B. 41227	51.00	14.18	87.5	7.23	95.76	
	B. 46151	49.78	14.44	90.1	7.19	95.23	
	B. 4688	53.50	12.92	81.2	6.91	91.52	
	Mean:				7.55	100.00	
	Significant Difference, 20: 1:				—	—	
	Sophia, Field 10 West "B." Reaped 28.iv.52 at 12.50 months. Rainfall:—119.49 inches.						
MEANS OF 4 PLOTS:	B. 4373	48.73	14.12	86.6	6.88	111.87	11
	*B. 41227	49.13	13.75	83.7	6.75	109.76	
	D. 123/45	46.28	13.76	88.8	6.37	103.58	
	D. 4/43	47.86	13.31	85.2	6.37	103.58	
	B. 46378	47.25	13.45	89.0	6.35	103.25	
	D. 40/43	36.26	14.57	83.8	5.28	85.85	
	D. 3/44	40.34	12.51	84.2	5.05	82.11	
	Mean:				6.15	100.00	
	Significant Difference, 20: 1:				—	—	
	Sophia, Field 13 West "B." Reaped 3.ix.52 at 14.75 months. Rainfall:—138.74 inches.						
MEANS OF 5 PLOTS:	D. 250/46	59.36	13.91	85.1	8.26	122.55	12
	*B. 41227	56.22	13.55	85.5	7.62	113.06	
	D. 29/46	54.10	14.01	87.4	7.58	112.46	
	D. 184/46	48.40	15.25	90.2	7.38	109.50	
	D. 39/46	56.88	12.74	88.0	7.25	107.57	
	D 247/46	45.93	14.48	87.0	6.65	98.66	
	D. 62/45	44.52	14.59	88.6	6.50	96.44	
	D. 87/45	45.63	13.54	87.0	6.18	91.69	
	D. 145/45	46.49	12.51	83.5	5.82	86.35	
	D. 152/46	42.98	13.22	84.9	5.68	84.27	
	D. 65/45	41.72	12.51	85.1	5.22	77.45	
	Mean:				6.74	100.00	
	Significant Difference, 20: 1:				1.86	27.60	
	Sophia, Field 13 West "A." Reaped 5.ix.52 at 15.00 months. Rainfall:—137.76 inches.						
MEANS OF 5 PLOTS:	*B. 41227	53.27	14.67	87.8	7.81	113.35	13
	B. 43349	61.85	12.42	85.0	7.68	111.46	
	D. 43/45	52.28	13.85	88.6	7.24	105.08	
	D. 8/45	51.60	13.68	87.6	7.06	102.47	
	D. 11/45	45.75	15.39	90.0	7.04	102.18	
	D. 14/45	46.47	15.04	88.0	6.99	101.45	
	D. 2/46	46.79	14.73	88.3	6.89	100.00	
	D. 173/45	49.92	13.14	86.3	6.56	95.21	
	D. 20/45	45.96	14.15	87.8	6.50	94.34	
	B. 44341	46.43	13.96	87.4	6.48	94.05	
	D. 8/46	46.47	11.83	82.5	5.50	79.83	
	Mean:				6.89	100.00	
	Significant Difference, 20: 1:				—	—	

*** Standard Cane.**

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Pln. L.B.I., Field A55 C.M. Reaped 27.viii.52 at 14.75 months. Rainfall:—106.39 inches.						
MEANS OF 5 PLOTS:	*B. 41227	36.50	11.98	83.8	4.37	115.01	14
	B. 4373	32.17	13.30	83.8	4.28	112.63	
	B. 43413	34.26	12.22	79.7	4.19	110.26	
	D. 37/45	33.74	12.32	84.3	4.16	109.47	
	B. 43214	35.64	11.12	79.8	3.96	104.21	
	B. 44341	32.03	11.76	85.1	3.77	99.21	
	B. 46378	26.89	10.70	77.3	2.88	75.79	
	B. 37161	28.14	10.06	80.9	2.83	74.47	
	Mean:				3.80	100.00	
	Significant Difference, 20: 1:				.67	17.63	
	Pln. Lusignan, Field 62 M.X.E. Reaped 20.viii.52 at 14.75 months. Rainfall:—117.34 inches.						
MEANS OF 5 PLOTS:	B. 4466	55.76	11.74	83.4	6.55	112.35	15
	B. 43413	49.46	13.16	85.4	6.51	111.66	
	B. 44341	45.86	12.80	87.4	5.87	100.69	
	*B. 41227	41.71	13.37	85.6	5.60	96.05	
	B. 44111	47.55	11.70	85.3	5.56	95.37	
	°B. 34104	39.28	12.51	87.5	4.92	84.39	
	Mean:				5.83	100.00	
	Significant Difference, 20 : 1 :				—	—	
	Pln. Lusignan, Field Good Hope East, 26 "B." Reaped 21.viii.52 at 15.25 months. Rainfall:—115.10 inches.						
MEANS OF 5 PLOTS:	D. 37/45	59.30	12.63	84.3	7.49	115.76	16
	B. 4373	56.06	12.31	84.9	6.90	106.65	
	B. 43214	52.59	12.97	84.9	6.82	105.41	
	D. 4/43	53.03	12.42	83.9	6.59	101.85	
	B. 4362	49.63	13.15	86.7	6.51	100.62	
	B. 37161	51.19	12.27	87.3	6.28	97.06	
	B. 46378	48.62	11.86	82.4	5.76	89.03	
	°B. 41227	47.72	11.33	84.1	5.41	83.62	
	Mean:				6.47	100.00	
	Significant Difference, 20 : 1:				1.22	18.86	

Results of Plant Cane Variety Trials on Berbice Frontland Clay.

Pln. Albion, Field Hampshire 2. Reaped 8.x.52 at 12.25 months. Rainfall:—69.53 inches.

MEANS OF 4 PLOTS:	°B. 41227	47.61	15.47	85.9	7.36	131.43	17
	B. 46369	55.47	12.86	84.5	7.13	127.32	
	B. 46351	48.58	13.19	84.7	6.41	114.46	
	B. 37161	47.36	13.43	84.3	6.36	113.57	
	B. 4691	54.41	11.69	80.3	6.36	113.57	
	B. 4668	46.77	12.87	83.0	6.02	107.50	
	B. 46151	39.52	13.65	85.2	5.39	96.25	
	B. 4688	44.73	11.90	80.6	5.32	95.00	
	B. 46297	36.57	14.47	84.9	5.29	94.46	
	B. 46378	41.65	12.33	84.9	5.13	91.61	
	B. 46340	35.20	14.01	84.5	4.93	88.04	
	B. 46394	39.01	12.51	81.8	4.88	87.04	
	B. 46102	38.18	12.70	81.7	4.85	86.61	
	B. 46290	41.46	11.49	83.9	4.76	85.00	
	B. 46103	34.27	13.84	84.3	4.74	84.64	
	B. 4699	35.68	12.90	84.5	4.60	82.14	
	Mean;				5.60	100.00	
	Significant Difference, 20 : 1:				.91	16.25	

*** Standard Cane.**

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre. Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Port Mourant, Field R.E. 6 W.S. Reaped 12.ii.52 at 15.25 months. Rainfall:—101.38 inches.							
MEANS OF 5 PLOTS	B. 43413	47.99	16.07	87.5	7.71	114.39	18
	*B. 41227	44.10	17.00	87.8	7.50	111.28	
	D. 37/45	48.55	14.84	87.8	7.21	106.97	
	B. 4373	40.02	17.33	87.6	6.94	102.97	
	B. 43214	38.36	17.26	88.3	6.62	98.22	
	*B. 34104	36.87	15.21	90.0	5.61	83.23	
	B. 44341	34.11	16.30	88.5	5.56	82.49	
	Mean:				6.74	100.00	
	Significant Difference, 20 : 1 :				.70	10.39	
Pln. Rose Hall, Field Reliance 82. Reaped 26.ii.52 at 14.25 months. Rainfall:—98.01 inches.							
MEANS OF 5 PLOTS:	*B. 41227	53.03	14.30	88.9	7.58	117.16	19
	B. 44165	45.40	14.96	88.4	6.79	104.95	
	D. 62/43	44.54	14.64	86.0	6.52	100.77	
	B. 44244	50.55	12.76	88.6	6.45	99.69	
	B. 4214	49.97	12.86	88.7	6.43	99.38	
	B. 4373	43.95	14.03	84.2	6.17	95.36	
	*B. 34104	42.25	14.15	87.7	5.98	92.43	
	B. 43413	49.11	11.86	82.7	5.83	90.11	
	Mean:				6.47	100.00	
	Significant Difference. 20 : 1 :				—	—	

Results of Plant Cane Variety Trials on Riverside Clay.

Pln. Diamond, Field 23/5 G.D. Reaped 5.ix.52 at 14.75 months. Rainfall:—123.89 inches.							
MEANS OF 5 PLOTS:	B. 4098	72.54	11.96	84.5	8.67	118.77	20
	*B. 41227	63.12	12.89	82.0	8.14	111.51	
	D. 37/45	62.84	12.89	82.9	8.11	111.10	
	B. 43413	62.99	12.00	82.1	7.56	103.56	
	B. 4373	65.37	11.00	77.0	7.19	98.49	
	B. 46378	49.33	13.06	83.7	6.44	88.22	
	B. 37161	55.16	11.67	83.8	6.44	88.22	
	B. 47256	59.11	9.88	80.6	5.84	80.60	
	Mean:				7.30	100.00	
	Significant Difference, 20 : 1 :				.87	11.92	

* **Standard Canes.**

TABLE III. (Contd.).— **Results of First Ratoon Variety Trials on Riverside Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Pln. Diamond, Field 116 W.S. Reaped 9.xii.52 at 13.75 months. Rainfall:—102.41 inches.						
MEANS OF 4 PLOTS :	B. 46351	54.17	13.49	88.3	7.31	124.53	21
	B. 37161	54.20	13.27	90.6	7.19	122.49	
	*B. 41227	47.99	13.76	88.8	6.60	112.44	
	B. 4688	59.80	10.93	84.6	6.54	111.41	
	B. 46151	44.90	13.97	90.7	6.27	106.81	
	B. 45151	46.84	13.24	86.7	6.20	105.62	
	B. 46378	47.87	11.84	85.7	5.67	96.59	
	B. 46297	37.88	14.86	89.4	5.63	95.91	
	B. 46369	52.89	10.65	85.1	5.63	95.91	
	B. 46340	41.92	13.37	88.6	5.61	95.57	
	B. 46290	44.17	12.30	85.9	5.43	92.50	
	B. 4668	39.40	13.75	86.0	5.41	92.16	
	B. 4691	47.28	11.38	84.2	5.38	91.65	
	B. 46394	39.90	12.80	86.1	5.11	87.05	
	B. 4608	48.61	10.29	78.2	5.00	85.18	
	B. 4699	38.69	12.85	86.5	4.97	84.67	
	Mean :				5.87	100.00	
	Significant Difference, 20 : 1 :				.94	16.73	

Results of Plant Cane Variety Trials on Pegassy Clay.

Pln. Blairmont, Field 14 L.S. Abary, Reaped 3.xii.52 at 12.00 months. Rainfall:—90.70 inches.

MEANS OF 4 PLOTS :	B. 47314	40.78	13.99	87.8	5.70	117.28	22
	B. 46378	40.46	13.55	85.2	5.48	112.76	
	B. 4764	41.53	12.58	85.0	5.22	107.41	
	B. S. 4711	43.12	12.05	85.7	5.20	107.00	
	B. S. 4743	42.47	12.18	85.1	5.17	106.38	
	*B. 41227	38.70	13.26	87.1	5.13	105.56	
	B. S.4747	42.12	12.07	82.9	5.08	104 53	
	B. 47419	40.69	12.33	84.7	5.02	103.29	
	B. 47298	34.64	14.35	88.6	4.97	102.26	
	B. 45137	35.53	13.35	86.9	4.74	97.53	
	B. 47204	36.82	12.60	84.7	4.64	95.47	
	B. 47256	40.72	11.27	84.3	4.59	94.44	
	B. 37161	32.07	13.96	87.6	4.48	92.18	
	B. 47262	36.78	11.29	83 9	4.15	85.39	
	B. 46232	27.52	11.89	85.8	3.27	67.28	
	Mean :				4.86	100.00	
	Significant Difference, 20 : 1 :				.97	19.96	

*** Standard Cane.**

SUB-SECTION C.—FIRST RATOON VARIETY TRIALS.

Seven first ratoon variety trials were reaped. They have been classified as follows :—

Soil Type & Locality.	*Index Nos. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	23—26	4
Berbice Frontland Clay	27—28	2
Pegassy Clay	29	1

TABLE IV.—**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 9 West "B." Reaped 9.ix.52 at 13.00 months. Rainfall :—107.05 inches.								
MEANS OF 4 PLOTS :	D. 54/43	42.84	14.56	84.9	6.23	111.85	D. 62/43	14.64	23
	D. 37/45	38.99	15.63	83.8	6.09	109.34	D. 54/43	13.71	
	D. 62/43	38.18	15.75	85.8	6.01	107.90	D. 37/45	13.42	
	D. 27/45	35.21	15.49	87.4	5.45	97.85	D. 27/45	12.67	
	*B. 41227	37.18	13.58	83.4	5.05	90.66	B. 41227	11.72	
	D. 27/44	31.87	14.48	84.2	4.62	82.94	D. 27/44	11.29	
	Mean :				5.57	100.00			
	Significant Difference, 20 : 1 :				.81	14.54			
	Sophia, Field 9 West "A." Reaped 11.ix.52 at 13.00 months. Rainfall :—106.83 inches.								
MEANS OF 4 PLOTS :	D. 62/43	43.18	15.03	88.6	6.49	127.76	D. 62/43	14.30	24
	*B. 41227	40.08	14.45	88.3	5.79	113.98	D. 4/43	13.06	
	D. 4/43	34.87	15.61	86.2	5.44	107.09	B. 41227	12.33	
	B. 43413	33.74	13.17	88.3	4.44	87.40	B. 43413	10.58	
	B. 4214	33.58	13.10	89.1	4.40	86.61	B. 4214	10.26	
	D. 14/46	31.98	12.26	82.8	3.92	77.17	D. 14/46	10.23	
	Mean :				5.08	100.00			
	Significant Difference, 20 : 1 :				1.08	21.26			
	Sophia, Field 5 East "B." Reaped 12.xi.52 at 12.00 months. Rainfall :—96.60 inches.								
MEANS OF 4 PLOTS :	D. 37/45	53.75	14.34	88.7	7.71	114.05	D. 37/45	15.88	25
	D. 150/46	48.09	13.81	85.0	6.64	98.22	D. 150/46	14.62	
	*B. 41227	47.00	14.08	85.2	6.62	97.93	D. 183/46	14.61	
	D. 275/46	43.48	14.98	86.8	6.51	96.30	B. 41227	14.33	
	D. 183/46	41.22	15.30	90.7	6.31	93.34	D. 275/46	14.22	
	Mean :				6.76	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Sophia, Field 5 East "A." Reaped 19.xi.52 at 12.25 months. Rainfall :—100.34 inches.								
MEANS OF 4 PLOTS :	D. 37/45	51.84	15.29	87.4	7.92	115.96	D. 37/45	17.78	26
	D. 49/46	53.73	14.37	87.6	7.72	113.03	D. 49/46	16.29	
	*B. 41227	49.91	13.96	87.4	6.97	102.05	B. 41227	15.34	
	D. 121/46	46.94	13.70	87.3	6.43	94.14	B. 43349	14.44	
	B. 43349	50.12	12.12	83.4	6.07	88.87	D. 121/46	14.20	
	D. 100/46	41.64	14.14	88.4	5.89	86.24	D. 100/46	13.90	
	Mean :				6.83	100.00			
	Significant Difference, 20 : 1 :				1.30	19.03			

* **Standard Cane.**

TABLE IV. (Contd.).– **Results of First Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Albion, Field 47A. Reaped 3.ix.52 at 12.00 months. Rainfall :—86.21 inches.								
MEANS OF 5 PLOTS :	B. 4373	43.73	14.68	83.0	6.42	109.56	B. 43413	14.16	27
	D. 54/43	45.39	14.02	84.8	6.36	108.53	D. 54/43	13.31	
	B. 43413	43.44	14.44	81.6	6.27	107.00	B. 4373	13.10	
	B. 4214	43.07	13.99	85.6	6.03	102.90	B. 4214	12.02	
	D. 62/43	42.34	13.10	83.1	5.55	94.71	D. 62/43	12.00	
	*B. 41227	41.22	13.36	82.8	5.51	94.03	B. 44279	11.09	
	*B. 34104	36.94	14.64	85.2	5.41	92.32	B. 34104	11.01	
	B. 44279	37.46	14.29	86.9	5.35	91.30	B. 41227	10 66	
	Mean:				5.86	100.00			
	Significant Difference, 20 : 1 :				.81	13.82			
	Pln. Port Mourant, Field 34 Res. Emp. Reaped 4.iii.52 at 10.75 months. Rainfall :—69.74 inches.								
MEANS OF 5 PLOTS :	*B. 41227	43.98	16.73	89.3	7.36	114.29	B. 41227	15.91	28
	B. 44244	49.51	14.53	84.9	7.19	111.65	B. 44111	14.50	
	B. 44111	45.30	15.39	87.6	6.97	108.23	B. 4448	14.15	
	*B. 34104	40.94	15.93	89.4	6.52	101.24	B. 44244	14.08	
	B. 4448	42.01	15.43	89.8	6.48	100.62	B. 34104	13.77	
	B. 44165	36.37	16.43	91.5	5.98	92.86	B. 43253	12.94	
	B. 43253	34.85	17.07	89.7	5.95	92.39	B. 44165	12.37	
	B. 44341	35.26	14.34	89.6	5.06	78.57	B. 44341	11.77	
	Mean:				6.44	100.00			
	Significant Difference, 20 : 1 :				.72	11.18			
	Results of a First Ratoon Variety Trial on Pegassy Clay.								
	Pln. Wales, Field 7 Sisters, Reaped 19.iii.52 at 11.00 months. Rainfall :—104.37 inches.								
MEANS OF 5 PLOTS :	D. 62/43	27.80	15.07	90.5	4.19	121.80	D. 62/43	8.61	29
	B. 4373	23.31	14.12	83.2	3.29	95.64	B. 43253	7.29	
	*B. 41227	21.27	15.36	89.6	3.27	95.06	B. 41227	7.29	
	D. 43253	19.36	15.65	91.4	3.03	88.08	B. 4373	7.26	
	Mean:				3.44	100.00			
	Significant Difference, 20 : 1 :				—	—			

*** Standard Cane.**

SUB-SECTION D.—SECOND RATOON VARIETY TRIALS.

Twenty-one second ratoon variety trials were reaped. They have been classified as follows :—

Soil Type & Locality.	*Index Nos. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	30—45	16
Berbice Frontland Clay	46	1
Riverside Clay	47—48	2
Pegassy Clay	49—50	2

TABLE V.—Results of Second Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Sophia, Field 14 East. Reaped 2.iv.52 at 12.75 months. Rainfall :—115.85 inches.									
MEANS OF 4 PLOTS :	D. 159/45	32.87	14.04	88.1	4.62	141.28	D. 159/45	16.58	30
	*B. 34104	22.16	16.62	91.9	3.68	112.54	B. 34104	14.15	
	D. 160/45	22.59	14.84	85.9	3.35	102.45	D. 165/45	14.11	
	D. 165/45	21.30	14.80	85.2	3.15	96.33	D. 160/45	13.65	
	D. 127/45	16.56	16.27	86.7	2.70	82.57	D. 127/45	13.34	
	D. 168/45	15.27	14.06	88.5	2.14	65.44	D. 168/45	12.74	
	Mean :				3.27	100.00			
	Significant Difference, 20 : 1 :				.99	30.28			
Sophia, Field 9 East, Reaped 8.iv.52 at 12.25 months. Rainfall :—116.06 inches.									
MEANS OF 4 PLOTS :	D. 37/45	27.59	14.86	86.0	4.10	135.76	D. 37/45	18.30	31
	D. 60/45	23.72	15.42	87.0	3.66	121.19	D. 27/45	16.67	
	D. 27/45	22.12	16.42	88.1	3.63	120.20	D. 8/45	16.06	
	*B. 34104	24.28	14.83	88.9	3.60	119.21	D. 60/45	15.73	
	D. 17/45	22.43	15.05	88.9	3.38	111.92	D. 87/45	15.50	
	D. 8/45	19.49	15.77	89.7	3.07	101.66	D. 62/45	15.32	
	D. 87/45	19.00	15.32	87.1	2.91	96.36	D. 17/45	15.15	
	D. 62/45	17.71	13.97	85.1	2.47	81.79	*B. 34104	14.90	
	D. 56/45	15.01	16.20	87.5	2.43	80.46	D. 56/45	13.85	
	D. 48/45	13.80	14.72	88.0	1.96	64.90	D. 55/45	13.09	
	Mean :				3.02	100.00			
	Significant Difference, 20 : 1 :				.75	24.83			
Sophia, Field 14 West, Reaped 22.iv.52 at 12.25 months. Rainfall :—116.04 inches.									
MEANS OF 4 PLOTS :	D. 131/45	21.59	14.25	85.6	3.08	128.87	D. 94/45	14.47	32
	D. 94/45	17.95	15.90	91.6	2.85	119.26	B. 34104	13.91	
	D. 133/45	17.15	16.41	92.4	2.81	117.57	D. 133/45	13.89	
	*B. 34104	16.83	16.19	89.9	2.72	113.81	D. 131/45	13.74	
	D. 119/45	19.04	14.23	85.9	2.71	113.39	D. 30/45	13.56	
	D. 141/45	18.03	14.16	88.9	2.55	106.69	D. 119/45	13.46	
	D. 121/46	16.98	13.74	89.6	2.33	97.49	D. 121/45	13.21	
	D. 30/45	12.75	16.28	91.5	2.07	86.61	D. 141/45	13.09	
	D. 110/45	7.95	16.46	89.2	1.31	54.81	D 110/45	11.80	
	Mean :				2.39	100.00			
	Significant Difference, 20 : 1 :				.99	41.42			

*** Standard Cane.**

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Sophia, Field 11 East "B." Reaped 2.v.52 at 11.75 months. Rainfall :—102.23 inches.								
MEANS OF 4 PLOTS :	D. 142/45	29.79	13.25	88.3	3.95	120.80	B. 34104	15.04	35
	D. 54/43	29.06	13.42	88.2	3.90	119.27	D. 142/45	14.93	
	*B. 34104	23.12	15.32	90.5	3.54	108.26	B. 4362	12.97	
	B. 4362	18.31	15.57	92.3	2.85	87.16	D. 54/43	11.22	
	B. 43253	13.60	15.42	90.5	2.10	64.22	B. 4325	10.38	
	Mean :				3.27	100.00			
	Significant Difference, 20 : 1 :				1.29	39.45			
	Sophia, Field 11 East "A," Reaped 3.v.52 at 11.75 months, Rainfall :—97.22 inches.								
MEANS OF 4 PLOTS :	*B. 34104	27.18	15.90	90.8	4.32	133.75	B. 44165	14.61	34
	D. 2/46	23.62	16.60	90.6	3.92	121.36	B. 34104	14.44	
	B. 44165	21.46	16.57	90.9	3.55	109.91	D. 14/46	13.59	
	D. 14/46	21.68	15.75	90.1	3.41	105.57	D. 2/46	13.54	
	D. 9/46	18.51	16.13	90.4	2.98	92.26	D. 9/46	11.96	
	D. 8/46	18.68	12.79	85.4	2.39	73.99	D. 86/45	11.06	
	D. 86/45	14.40	14.41	88.5	2.07	64.09	D. 8/46	10.54	
	Mean :				3.23	100.00			
	Significant Difference, 20 : 1 :				.92	28.48			
	Sophia, Field 6 West "A." Reaped 20.viii.52 at 12.75months. Rainfall :—107.77 inches.								
MEANS OF 4 PLOTS :	*B. 34104	34.26	12.98	88.3	4.45	104.71	B. 34104	17.79	35
	D. 6/43	30.87	13.14	85.5	4.06	95.53	D. 6/43	17.57	
	Mean :				4.25	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Sophia, Field 6 West "B." Reaped 22.viii.52 at 12.75 months. Rainfall :—109.42 inches.								
MEANS OF 4 PLOTS :	D. 29/46	35.67	15.14	87.4	5.40	116.63	B. 34104	19.40	36
	*B. 34104	35.16	15.30	90.2	5.38	116.20	D. 29/46	16.77	
	D. 3/46	28.29	14.57	86.8	4.12	88.98	D. 3/46	16.02	
	D. 145/45	25.36	14.35	86.1	3.64	75.36	D. 145/45	14.93	
	Mean :				4.63	100.00			
	Significant Difference, 20 : 1 :				.80	17.28			

*** Standard Cane.**

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 4 West "B." Reaped 17.ix.52 at 12.50 months. Rainfall :—105.16 inches.								
MEANS OF 4 PLOTS :	D. 123/45	47.36	13.34	86.0	6.32	125.65	D. 123/45	22.15	37
	D. 24/46	42.08	12.14	85.3	5.11	101.59	D. 29/46	19.74	
	*B. 34104	40.95	12.25	88.6	5.02	99.80	D. 24/46	19.38	
	D. 29/46	39.14	12.51	85.2	4.90	97.42	D. 1/46	16.93	
	D. 1/46	33.29	11.45	80.3	3.81	75.75	B. 34104	16.20	
	Mean :				5.03	100.00			
	Signicant Difference, 20 : 1 :				.89	17.69			
	Sophia, Field 4 West "A." Reaped 19.ix.52 at 12.75 months. Rainfall :—103.94 inches.								
MEANS OF 4 PLOTS :	D. 37/45	47.31	14.78	87.0	6.99	118.68	D. 37/45	24.30	38
	D. 17/46	40.96	13.73	85.2	5.62	95.42	D. 18/46	19.78	
	*B. 34104	42.48	13.14	86.6	5.58	94.74	D. 17/46	19.64	
	D. 18/46	40.05	13.45	86.2	5.39	91.51	B. 34104	19.29	
	Mean:				5.89	100.00			
	Significant Difference, 20 : 1 :				.74	14.31			
	Sophia, Field 3 West "B." Reaped 27.ix.52 at 12.50 months. Rainfall :—97.95 inches.								
MEANS OF 5 PLOTS :	D. 54/43	48.66	13.25	86.4	6.45	111.98	D 62/43	22.65	39
	D. 62/43	41.93	15.01	88.0	6.29	109.20	D. 54/43	20.66	
	*B. 34104	36.01	15.07	90.6	5.43	94.27	B. 4362	18.72	
	B. 4362	30.23	16.06	87.5	4.86	84.37	B. 34104	18.28	
	Mean :				5.76	100.00			
	Significant Difference, 20 : 1 :				1.11	19.27			
	Sophia, Field 3 West "A." Reaped 27.ix.52 at 12.25 months. Rainfall :—97.95 inches.								
MEANS OF 4 PLOTS :	D. 58/43	45.80	14.47	88.4	6.62	104.25	D. 58/43	20.43	40
	*B. 34104	44.41	14.09	89.8	6.26	98.58	B. 34104	19.77	
	B. 43253	35.78	17.23	89.5	6.16	97.01	B. 43253	18.99	
	Mean :				6.35	100.00			
	Significant Difference, 20 : 1 :				—	—			

* **Standard Cane.**

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 1 East "B." Reaped 30.ix.52 at 12.00 months. Rainfall :—97.08 inches.								
MEANS OF 4 PLOTS :	D. 87/45	45.08	14.40	85.9	6.49	122.68	D. 87/45	21.21	41
	D. 27/45	38.14	15.21	89.0	5.80	109.64	D. 43/45	20.32	
	D. 43/45	39.42	13.94	88.0	5.50	103.97	D. 27/45	19.47	
	*B. 34104	34.10	14.67	89.0	5.00	94.52	B. 34104	19.25	
	D. 18/45	32.93	14.32	88.7	4.72	89.22	D. 18/45	18.41	
	D. 8/45	32.15	13.18	88.8	4.24	80.15	D. 8/45	18.31	
	Mean :				5.29	100.00			
	Significant Difference, 20 : 1 :				1.18	22.31			
	Sophia, Field 1 East "A." Reaped 2.x.52 at 12.00 months. Rainfall :—97.65 inches.								
MEANS OF 4 PLOTS :	D. 37/45	43.71	14.70	80.7	6.42	114.85	D. 37/45	23.69	42
	D. 14/45	36.84	16.49	95.4	6.07	108.59	B. 34104	19.98	
	*B. 34104	34.23	16.30	89.4	5.58	99.82	D. 14/45	19.98	
	D. 56/45	29.67	17.28	89.8	5.13	91.77	D. 56/45	19.08	
	D. 19/45	33.58	14.19	88.2	4.76	85.15	D. 19/45	18.25	
	Mean				5.59	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Pln. De Kinderen, Field 51 Z.E. Reaped 18.iii.52 at 11.50 months. Rainfall :—104.44 inches.								
MEANS OF 5 PLOTS :	B. 37172	20.66	16.10	92.2	3.33	102.46	B. 40105	14.23	43
	B. 40105	22.65	14.63	89.1	3.31	101.85	B. 37172	11.59	
	*B. 34104	21.46	14.52	91.4	3.12	96.00	B. 34104	10.42	
	Mean :				3.25	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Pln. L.B.I., Field 20 L.R. Reaped 26.viii.52 at 11.75 months. Rainfall :—74.63 inches.								
MEANS OF 5 PLOTS :	B. 43214	45.15	13.93	87.2	6.29	120.73	B. 43214	20.38	44
	D. 24/43	43.61	13.62	82.4	5.94	114.01	D. 54/43	19.44	
	D. 54/43	47.27	12.40	81.6	5.86	112.48	D. 58/43	19.34	
	D. 58/43	39.23	13.75	83.9	5.39	103.45	B. 34104	14.46	
	D. 149/41	34.46	12.77	82.8	4.40	84.45	†D. 24/43	12.12	
	B. 43391	37.29	11.69	84.0	4.36	83.69	†D. 149/41	10.60	
	*B. 34104	32.59	12.98	86.8	4.23	81.19	†B. 43391	8.67	
	Mean :				5.21	100.00			
	Significant Difference, 20 : 1 :				.61	11.71			

*** Standard Cane.**

† Results for Plants and 2nd Ratoons only.

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Ogle, Field 39 S. Industry. Reaped 10.ix.52 at 11.75 months. Rainfall :—75.94 inches.									
MEANS OF 5 PLOTS :	D. 62/43	38.33	14.02	85.1	5.38	117.98	D. 58/43	16.61	45
	D. 58/43	35.55	13.85	85.3	4.92	107.89	B. 4362	16.57	
	B. 4362	31.61	14.57	85.2	4.60	100.88	B. 62/43	15.86	
	B. 43253	28.48	15.40	88.8	4.39	96.27	D. 43253	14.81	
	*B. 34104	31.27	11.15	84.1	3.49	76.53	B. 34104	12.23	
	Mean :				4.56	100.00			
	Significant Difference. 20 : 1 :				.54	11.84			
Results of a Second Ratoon Variety Trial on Berbice Frontland Clay.									
Pln. Albion, Field 60 A. Reaped 27.xi.52 at 12.25 months. Rainfall :—89.97 inches.									
MEANS OF 5 PLOTS :	B. 4098	39.55	14.35	87.6	5.67	112.06	D. 158/41	19.13	46
	D. 58/43	41.38	13.11	84.6	5.42	107.11	B. 4098	18.51	
	D. 158/41	35.92	13.88	85.7	4.98	98.42	D. 58/43	18.34	
	*B. 34104	31.97	13.06	88.1	4.18	82.61	B. 34104	15.97	
	Mean :				5.06	100.00			
	Significant Difference, 20 : 1 :				—	—			
Results of Second Ratoon Variety Trials on Riverside Clay.									
Pln. Diamond, Field 55 G.D. Reaped 2.x.52 at 11.75 months. Rainfall :—86.12 inches.									
MEANS OF 5 PLOTS :	B. 4362	35.24	16.89	92.0	5.95	132.22	B. 4362	20.28	47
	B. 43253	28.58	16.93	89.1	4.84	107.56	B. 43253	17.24	
	D. 54/43	35.11	13.52	87.9	4.75	105.56	D. 58/43	16.30	
	D. 58/43	29.72	14.39	87.3	4.28	95.11	D. 54/43	16.08	
	*B. 34104	20.61	12.93	89.8	2.66	59.11	B. 34104	11.67	
	Mean :				4.50	100.00			
	Significant Difference, 20 : 1 :				1.17	26.00			
Pln. Peters Hall, Field 77. Reaped 11.iii.52 at 11.00 months. Rainfall :—106.95 inches.									
MEANS OF 5 PLOTS :	*B. 34104	24.63	14.90	90.1	3.67	101.38	B. 4362	12.18	48
	B. 4362	22.69	16.02	86.5	3.64	100.55	D. 158/41	11.72	
	D. 158/41	24.37	14.62	81.5	3.56	98.34	B. 34104	11.09	
	Mean :				3.62	100.00			
	Significant Difference, 20 : 1 :				—	—			

*** Standard Cane.**

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Versailles, Field M T. 49. Reaped 7.xi.52 at 12.00 months. Rainfall :—83.05 inches.								
MEANS OF 5 PLOTS :	B. 4098	54.54	14.96	86.2	8.16	108.37	B. 4098	23.77	49
	*B. 41227	50.45	15.21	86.3	7.68	101.99	B. 41227	22.55	
	*B. 34104	44.83	15.07	88.8	6.76	89.77	B. 34104	20.81	
	Mean :				7.53	100.00			
	Significant Difference, 20 : 1 :				.85	11.29			
	Pln. Wales, Field Patencia "F." Reaped 12.viii.52 at 12.00 months. Rainfall :—87.65 inches.								
MEANS OF 5 PLOTS :	B. 4362	38.43	15.94	90.2	6.13	142.56	B. 4098	20.91	50
	B. 4098	30.60	13.61	88.7	4.17	96.98	B. 4362	20.60	
	B. 37172	27.24	13.55	90.7	3.69	85.81	B. 37172	17.43	
	*B. 34104	26.35	12.13	87.9	3.20	74.42	B. 34104	12.96	
	Mean :				4.30	100.00			
	Significant Difference, 20 : 1 :				1.45	33.72			

*** Standard Canes.**

SUB-SECTION E.—VARIETY PERFORMANCE SUMMARY.

Varieties in experiment during 1952 are discussed under the following categories :—

(a) Standard Canes ;

(b) Barbados Seedlings produced prior to the B.40' series ;

(c) Barbados and Demerara Seedlings of the B.40' and D.'41 series ;

(d) Barbados and Demerara Seedlings of the B.42, B.43' and D.'43 series ;

(e) Barbados and Demerara Seedlings of the B.44' and D.'44 series ;

(f) Barbados and Demerara Seedlings of the B.45', B.46' and D.'45 and D.'46 series ;

(g) Barbados Seedlings of the 1947 series ;

A. Standard Canes.

B.34104 (Co. 281 x B.H. 10/12)

Trial Nos.: 1, 15, 18, 19, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50.

B.34104 now occupies 48% of the Colony's acreage. Its use as a standard is being discontinued, owing to its heavy susceptibility to 'Leaf Scald' (*Xanthononas abilineans*) throughout the cane areas of the colony. It is being replaced as such by B.37161 and B.41227 which are less susceptible. These two varieties are being extensively planted on estates owing to their satisfactory yields.

B.37161 (B.3365 x B.603)

Trial Nos.: 14, 16, 17, 20, 21, 22.

B. 37161 has completed its experimental testing. Its performance as a commercial cane, especially on the pegassy clays, has merited its inclusion in tests as a standard for which it is presently used along with B.41227. It is capable of heavy yields and its juice quality is normally high. It now occupies 14% of the Colony's acreage. It is at present rated as being susceptible* to 'Leaf Scald' disease.

B.41227 (B.35207 x P.O.J. 2878)

Trial Nos.: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 49.

B.41227. This variety is used as a standard in all new trials. Its general performance both in trials and commercial plantings continues to be satisfactory. It yields well on both clay and pegasse soils and now occupies 22% of the estates acreage. It is a heavy yielder with a satisfactory juice quality and ratoons well. It is, however, rated as being susceptible to 'Leaf Scald' disease.

D.14/34 (Co. 281 x Diamond 10)
Co. 419 (P.O.J. 2878 x Co. 290)
Co. 421 (P.O.J. 2878 x B.3412)

These three varieties which were formerly used as standards have fallen into disuse as such since the introduction of the better commercial varieties described in the foregoing.

*The terms "susceptible," "tolerant" and "resistant" are used for rating the varieties in regard to their resistance to Leaf Scald disease as described in Bulletin No. 20 page 55.

Co. 421 is being discarded, but D. 14/34 and Co. 419 are being maintained to a limited extent on some estates although, these two canes are susceptible to 'Leaf Scald.'

B. Barbados Seedlings Produced prior to the B.40' Series.

B.37172 (P.O.J. 2878 x B.2935)

Trial Nos. : 43, 50.

B.37172 has now been tested in eight trials up to second ratoons. While its performance has shown it to be better than B.34104 but somewhat below B.41227 in respect to yield of sugar, it has not been unduly extended. It is rated as resistant to 'Leaf Scald.'

C. Barbados and Demerara Seedlings of the B.40 and D.41' Series.

B.4098 (B.3439 x Co. 290)

Trial Nos. : 20, 46, 49, 50.

B.4098 has been tested in twelve trials up to second ratoons. In those trials it has not shown itself to be as high a yielder as B.41227 but owing to its tolerance to 'Leaf Scald' ; average juice quality and fair cane yields on frontland and riverside clays, every effort is being made to extend it as rapidly as possible. It, however, does not appear to be suitable to the more pegassy soils and in normal dry seasons its rate of growth is retarded more than is normal. It is also very susceptible to borer attack.

B.40105 (B.3439 x Co. 290)

Trial Nos. : 7, 43.

B.40105 was reaped in thirteen trials up to second ratoons. Its performance in those trials indicates it to be a somewhat higher yielder than B.34104 but inferior to B.41227. It ratoons well but stems were normally light and medium in length, and it does not find much favour on estates. B.40105 is tolerant to 'Leaf Scald.'

D.158/41 (Co. 421 x D.166/34)

Trial Nos. : 46, 48.

D.158/41 was reaped up to second ratoons in nine trials against B.34104 and once against B.41227. It has proved to be generally better than B.34104 but owing to an insufficient number of tests against B.41227 it cannot yet be accurately assessed against this variety. From observation, however, it

appears to be at least as good as B.41227 on light or pegasse soils. On heavy clays it yields well as plants but tends to be inconsistent in ratoons, especially when reaped in wet weather. Its juice is of average quality and it is tolerant to 'Leaf Scald.'

D. Barbados and Demerara Seedlings of the B.42, B.43' and D.'43 Series.

B.4214 (B.3365 x Co. 290)

Trial Nos.: 19, 24, 27.

Of the 1942 Barbados series only B.4214 showed any promise. It has now been reaped in trials six times as plants, five as first ratoons and two as second ratoons. It is better yielder than B.34104 but not as high as B.41227. Its juice quality is below average.

B.4362 (B.37161 x P.O.J. 2878)

Trial Nos.: 16, 33, 39, 45, 47, 48, 50.

B.4362 has now been reaped in nine trials up to second ratoons and has proved to be as good as B.41227. The yield of cane per acre is lower than that of B.41227 but this is compensated by its better juice quality. It is, however, susceptible to 'Leaf Scald.'

B.4373 (B.3354 x Co. 290)

Trial Nos.: 11, 14, 16, 18, 19, 20, 27, 29.

B.4373 has now been reaped eleven times as plants, four times as first ratoons and once as second ratoons. From its performance in these trials it may be regarded as very promising in as much as its yields as plants and first ratoons are in general equal to those of B.41227. It has a juice of average quality and is resistant to 'Leaf Scald' disease.

B.43214 (B.3353 x Co. 290)

Trial Nos.: 14, 16, 18, 44.

B.43214 has now been reaped in trials five times as plants and twice as both first and second ratoons. From the results of these trials it appeared nearly as good as B.41227. In particular it appears to maintain its yield as ratoons. It has a reasonably good juice quality but, unfortunately, it is susceptible to 'Leaf Scald.'

B.43253 (B.3439 x B.37175)

Trial Nos. : 28, 29, 33, 40, 45, 47.

B.43253 has nearly completed its testing. It was reaped eleven times as plants, eight times as first ratoons and six as second ratoons. In these trials it was somewhat better than B.34104 but does not appear to be as good as B.41227. Its juice quality is above average but the yield of cane is below. It was distributed to nearly all estates but apparently it has not found much favour. It is, however, resistant to 'Leaf Scald.'

B.43349 (B.37227 x B.3337)

Trial Nos. : 13, 26.

B.43349 was reaped three times as plants, twice as first ratoons and once only as second ratoons. While it cannot be regarded as having been sufficiently tested to assess its value, its performance in these trials appears to show that it is better than B.34104 but not up to B.41227. It is susceptible to 'Leaf Scald.'

B.43413 (M.D. 47 x Co. 290)

Trial Nos. : 14, 15, 18, 19, 20, 24, 27.

B.43413, reaped eleven times as plants, seven times as first ratoons and twice as second, has proved to be significantly better than B.34104 and approximately equal to B.41227. Its juice quality appears to be inferior to that of B.41227. It is rated as tolerant to 'Leaf Scald.'

D.4/43 (D.200/36 x Diamond 10)

Trial Nos. : 11, 16, 24.

D.4/43 has now been reaped in trials eight times as plants, six times as first ratoons and four times as second ratoons. The results of these trials have shown this variety to be better than B.34104 and comparable to B.41227 in both cane yields and juice quality. It is tolerant to 'Leaf Scald.'

D.54/43 (Co. 421 x D. 166/34)

Trial Nos. : 23, 27, 33, 39, 44, 47.

D.54/43 has been reaped ten times as plants and first ratoons, and seven times as second ratoons and appears to be a promising variety. The results of these trials show D.54/43 to be significantly better than B.34104. It met B.41227 in two of these trials up to first ratoons and in these it was also significantly better than B.41227. It will be further tested against B.41227. It appears to be equal to B.41227 in juice quality. Its resistance to 'Leaf Scald' is being investigated.

D.58/43 (Co. 421 x Co. 331)

Trial Nos. : 40, 44, 45, 46, 47.

D. 58/43 has been reaped in five trials up to second ratoons and has shown itself to be significantly better than B.34104. It has not yet been tested against B.41227, but its general behaviour in trials indicates that it should compare favourably with this variety. Both its cane yields and juice quality were good, and it is tolerant to 'Leaf Scald.' It will be tested against B.41227 in future trials.

D.62/43 (Co. 421 x Co. 331)

Trial Nos. : 19, 23, 24, 27, 29, 39, 45.

D. 62/43 is now fully tested having been reaped in trials sixteen times as plants, fifteen times as first ratoons and nine times as second ratoons. From the results of these trials, this variety has proved to be significantly better than B.34104 and B.41227. It has a better than average juice quality and favourable field characteristics. It is, however, susceptible to 'Leaf Scald.'

E. Barbados and Demerara Seedlings of the B.44' and D.'44 Series.

Of the Barbados 1944 series tested only B.44279 (B.37161 x B.3337) has shown any promise. It was reaped three times each as plants and first ratoons. Its performance in these two crops indicates that it was better than B.34104 and equal to B.41227. It will be further tested. Its resistance to 'Leaf Scald' is being investigated.

Of the Demerara 1944 series tested, only D.10/44 (D.200/36 x Co. 331) has shown any promise. It was reaped in one cycle only of three crops and had proved better than B.34104. It is to be further tested against B.41227. It is tolerant to 'Leaf Scald.'

F. Barbados and Demerara Seedlings of the B.45, B.46, and D.'45 and D.'46 Series.

Trial Nos : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 20. 21, 22, 23, 25, 26, 30, 31, 32, 34, 36, 37, 38, 41, 42.

The Barbados Seedlings of the B.45' and B.46' series have been reaped only up to first ratoons. Of these B.45151, B.45188, B.45270, B.46218, B.46290, B.46351, B.46369 and especially B.46378 show promise and will be further tested. Their resistance to 'Leaf Scald' is being investigated.

Most of the promising Demerara Seedlings of the D.'45 and D.'46 series, have been reaped up to second ratoons. Of the 1945 series, D.37/45 has shown itself to be significantly better than B.41227 and tolerant to 'Leaf Scald,' while ten other varieties, though insufficiently tested, also show promise. Of the 1946 series five varieties show promise and will be further tested.

The rating of these varieties for resistance to 'Leaf Scald' is also being investigated.

G. Barbados Seedlings of the 1947 Series.

Trial Nos. : 1, 2, 20, 22.

The Barbados Seedlings of the 1947 series were reaped in two sorting trials as plants, one on the pegasse clay of Pln. Uitvlugt and one on frontland clay at the Sugar Station. Two other normal estate trials were also reaped. It is considered too early to comment on the performance of these varieties. Those varieties showing promise from these trials will be further tested. Their resistance to 'Leaf Scald' is being investigated.

TABLE VI.—**Correlated Mean Sucrose Yields in Tons per Acre from all Experiments.**

Variety.	Plants.		First Ratoons.		Second Ratoons.		Total Yield.	Total Yield *B. 41227 =100.00
	Yield.	No. of Expts.	Yield.	No. of Expts.	Yield.	No. of Expts.		
Three Crops, Plants, First and Second Ratoons.								
B. 43214	7.16	5	7.25	2	7.20	2	21.61	125.79
D. 58/43	8.30	8	6.32	8	5.95	8	20.57	119.73
D. 62/43	7.80	16	6.61	15	6.14	10	20.55	119.62
D. 54/43	8.05	10	5.97	10	6.45	7	20.47	119.15
D. 37/45	7.53	10	6.45	6	6.09	3	20.07	116.82
D. 142/41	7.70	14	7.02	13	5.21	16	19.93	116.01
D. 158/41	7.93	13	6.09	12	5.78	10	19.80	115.25
B. 4362	7.88	9	5.95	9	5.89	9	19.72	114.78
B. 40105	7.64	11	6.64	9	5.31	13	19.59	114.03
B. 4373	6.76	11	6.46	4	6 06	1	19.28	112.22
D. 4/43	7.22	8	5.87	6	5.51	4	18.60	108.27
B. 43413	6.98	11	5.87	7	5.65	2	18 50	107.68
B. 37161	6.92	17	5.68	9	5.57	5	18.17	105.76
B. 37172	7.47	6	5.61	6	4.89	8	17.97	104.60
B. 4098	7.43	12	5.66	11	4.80	12	17.89	104.13
Co. 421	7.57	22	5.80	20	4.49	16	17.86	103.96
B. 43253	6.70	11	5.18	8	5.94	6	17.82	103.73
B. 4214	6.85	6	5.23	5	5.44	2	17.52	101.98
*B. 41227	6.58	32	5.47	17	5.13	12	17.18	100.00
B. 34104	6.51	105	5.40	97	5.01	83	16.92	98.49
D. 14/34	6.44	30	5.41	22	4.71	10	16.56	96.39
B. 4448	6.17	7	5.49	7	4.47	1	16.13	93.89
Co. 419	6.33	5	5.55	4	4.01	2	15.89	92.49
D. 3/44	5.61	5	5.19	2	4.61	1	15.41	89.70
B. 44165	5.89	8	4.75	7	4.15	2	14.79	86.09
Two Crops, Plants and First Ratoons.								
B. 46351	6.73	5	5.82	2	.....	.....	12.55	104.15
B. 46378	6.44	13	6.11	2	.....	.....	12.55	104.15
B. 46369	6.70	5	5.83	2	.....	.....	12.53	103.98
*B. 41227	6.58	32	5.47	17	.....	.....	12.05	100.00
B. 34104	6.51	105	5.40	97	.....	.....	11.97	99.34
B. 44244	6.53	11	5.35	9	.....	.....	11.88	98.59
B. 44111	6.43	12	5.37	9	.....	.....	11.80	97.93
B. 4688	5.72	5	5.64	2	.....	.....	11.36	94.27
B. 44341	6.30	12	4.95	9	.....	.....	11.25	93.36
B. 46297	5.63	5	4.87	2	.....	.....	10.50	87.14
B. 46151	5.98	5	4.16	2	.....	.....	10.14	84.15

* **Standard Canes.**

TABLE VII.—The Quality of the Most Promising Seedlings as Compared with B. 41227.

Variety.	Pol. % Cane.		Juice Purity.	
	% of B. 41227	No. of Comparisons.	% of B. 41227	No. of Comparisons.
D. 4/43	116.21	7	115.25	7
B. 43253	108.09	5	101.62	5
D. 14/34	107.79	3	104.55	3
B. 4362	105.10	3	100.23	3
B. 46151	105.01	7	102.84	7
D. 54/43	104.27	4	101.71	4
B. 37172	104.04	4	101.61	4
D. 62/43	103.68	11	100.26	11
B. 4373	103.28	10	99.03	10
D. 37/45	102.80	10	100.37	10
B. 40105	102.71	10	99.07	10
B. 43214	102.58	3	98.94	3
B. 46297	101.71	7	100.10	7
D. 58/43	101.32	24	98.48	24
B. 4098	100.63	10	99.20	10
*B. 41227	100.00	—	100.00	—
B. 43413	99.71	10	98.55	10
D. 3/44	99.45	6	99.46	6
B. 44341	98.80	9	99.44	9
B. 44111	98.37	8	99.43	8
B. 34104	98.16	25	100.97	25
B. 46378	98.12	14	99.93	14
Co. 419	98.09	11	98.79	11
B. 46351	98.06	7	98.51	7
D. 158/41	98.04	3	97.74	3
B. 44165	97.83	5	99.86	5
B. 4448	97.57	4	97.80	4
Co. 421	96.30	11	97.34	11
B. 4214	96.21	5	101.46	5
B. 46369	95.37	7	100.00	7
B. 37161	95.25	7	100.47	7
B. 44244	93.18	8	99.01	8
D. 142/41	91.72	4	98.05	4
B. 4688	86.75	7	94.46	7

*** Standard Cane.**

SUB-SECTION F.—GENERAL SUMMARY AND RECOMMENDATIONS.

In the past, recommendations of cane varieties to the Sugar Industry have been made on the basis of sugar per acre, cane quality and desirable field characters. With the discovery locally of 'Leaf Scald' disease in the estates cane cultivations, however, it is essential that the varieties to be recommended to the industry in future should be limited to those that in addition to possessing the usual desirable characteristics are resistant or at least tolerant to 'Leaf Scald' disease. This unfortunately, will result in having to recommend that a number of otherwise excellent varieties should be discarded or planted on a more limited scale than would otherwise be the case. It should also be noted that at present the method of assessing the degree of susceptibility or resistance of

varieties to the disease is not as definite as is desirable and it is hoped to develop a more accurate method of making this assessment. Until a more satisfactory technique is found and more experience of the varieties in the field is gained, the 'Leaf Scald' rating of the newer varieties should be regarded as tentative.

As an example of the difficulty of assessing the degree of susceptibility to 'Leaf Scald' of cane varieties, reference might be made to D.62/43. This variety often shows the leaf symptoms of 'Leaf Scald' disease very markedly. On the other hand, inspection of the vascular system of canes showing such leaf symptoms discloses comparatively little damage to these tissues in marked contrast to B.34104, for example, where the vascular system appears to be damaged much more extensively with less severe leaf symptoms. It is intended to lay down an experiment to measure the degree of loss in yield of sugar in artificially infected as compared with un-infected cane using varieties at present classed as "very susceptible," "tolerant" and "resistant" to 'Leaf Scald.' Growth rates will also be studied and an attempt made to correlate disease symptoms therewith. Such experiments in conjunction with laboratory and other field investigations should be helpful in obtaining a technique of assessing accurately the 'Leaf Scald' susceptibility of cane varieties.

Taking into account that there must be a period of transition from high yielding 'Leaf Scald' susceptible varieties at present in cultivation to varieties resistant or tolerant to 'Leaf Scald,' the following recommendations of the most suitable varieties for planting are made on the basis of results to date. The figures given refer to the percentage of the area recommended to be planted in the respective varieties.

SOIL TYPE.

Variety.	*Frontland Clays.*			
	Berbice.	*Demerara.*	*Riverside Clays.*	*Pegasse.*
B.41227	50	50	50	35
B.37161	25	25	30	45
B.4098	15	10	10	5
D.37/45 }				
B.4373 }	10	15	10	15

These recommendations may be modified in accordance with future experimental results, and should be regarded at this stage as tentative. Where conditions on certain estates appear to favour a particular variety more than another the management will necessarily be guided by local experience. It is desirable however, that plantings of the newer recommended varieties be so arranged to cover as wide a range as possible within the soil type for which recommended rather than that plantings be restricted to a narrow block of fields.

MANURIAL TRIALS.

Seven manurial trials were undertaken during 1952 and these all involved the use of phosphatic fertilizers in conjunction with nitrogen on pegassy clays. In addition, three of these experiments were designed to compare the relative effectiveness of placement of the phosphatic fertilizer as against the usual estate method of applying it on the surface of the soil around the cane stool.

The trials are placed in two groups for convenience and to facilitate discussion.

A. Trials in which a High Level of Phosphate and Nitrogen is Compared with Varying Levels of Nitrogen alone. (A1 & A2)

(A1) *Field 3 De W. Pln. De Kinderen.*

(A2) *Field 4 De W. Pln. De Kinderen.*

The tabulated results of these two experiments shew that the significant differences in yields are due solely to the difference in rates of nitrogen applied. Superphosphate at a rate supplying 125 lbs. P_2O_5 per acre in conjunction with sulphate of ammonia at a rate supplying 140 lbs. nitrogen per acre gave no significant increase over nitrogen alone at the same level.

TABLE I. (A1)

Effect of Sulphate of Ammonia and Superphosphate on Pegassy Clay.

De Kinderen, Field 3 De W.

B. 34104.

Treatments per Acre.	Mean Yields in							
	Lbs./Acre.		Tons Cane/Acre.			Tons Sucrose/Acre.		
	N.	P_2O_5.	Plants.	1st Ratoons.	Total for 2 Crops.	Plants.	1st Ratoons.	Total for 2 Crops.
6 cwt. S.A. + 6 cwt. S.P.	141	124	38.56	36.88	75.44	5.67	5.45	11.12
8 cwt. S.A.	188	0	40.13	39.56	79.69	5.40	5.71	11.11
6 cwt. S.A.	141	0	37.50	38.68	76.18	5.21	5.62	10.83
4 cwt. S.A.	94	0	35.91	35.41	71.32	5.63	5.40	11.03
2 cwt. S.A.	47	0	34.66	33.42	68.08	5.14	5.02	10.16
Mean :			37.35	36.79		5.41	5.44	
Significant Difference, 20:1:			2.06	3.79		—	—	

TABLE II. (A2)

Effect of Sulphate of Ammonia and Superphosphate on Pegassy Clay.

De Kinderen, Field 4 De W.

B. 34104.

Mean Yields in

Treatments per Acre.	Lbs./Acre.		Tons Cane/Acre.			Tons Sucrose/Acre.		
	N.	P_2O_5.	Plants.	1st Ratoons.	Total for 2 Crops.	Plants.	1st Ratoons.	Total for 2 Crops.
6 cwt. S.A. + 6 cwt. S.P.	141	124	33.85	36.91	**70.76**	4.65	5.01	9.66
8 cwt. S.A.	188	0	34.62	37.20	71.82	4.62	5.37	9.99
6 cwt. S.A.	141	0	32.42	36.29	68.71	4.61	5.20	9.81
4 cwt. S.A.	94	0	32.42	35.25	67.67	4.50	5.16	9.66
2 cwt. S.A.	47	0	29.60	32.29	61.89	4.19	4.67	8.86
Mean :			32.58	35.59		4.51	5.08	
Significant Difference, 20:1:			3.11	3.02		—	—	

B. Trials Involving Various Levels of Phosphate and Nitrogen (B1—B5)*.

(B1). *Field 76 R.P., Pln. Providence*: In this experiment, ammonium phosphate and sulphate of ammonia were applied to give the rates of P_2O_5 and nitrogen set out in Table III.

Table III. (B1)

Results of a Phosphate Manurial Trial on Pegassy Clay.

Providence, Field 76 R.P.

B. 34104.

Treatments per Acre.	Lbs./Acre.		Mean Yields in Tons Cane/Acre.				Tons Sucrose/Acre.			
	N.	P_2O_5.	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.
Control { 2 cwt. S.A. (Plants).	47	0	26.49	36.51	41.60	104.60	3.87	4.65	5.21	13.73
Control { 4 cwt. S.A. (Ratoons).	94	0								
3 cwt. A.P. + 1½ cwt. S.A.	72	155	23.22	39.66	39.49	102.37	3.27	4.86	4.83	12.96
6 cwt. ,, + 3 cwt. ,,	144	310	31.17	41.44	40.82	113.43	4.72	5.02	5.07	14.81
9 cwt. ,, + 4½ cwt. ,,	217	465	31.06	40.72	40.15	111.93	4.28	4.95	5.19	14.42
Mean:			27.98	39.58	40.51		4.03	4.87	5.07	
Significant Difference, 20 : 1:			3.36	—	—		.76	—	—	

* Trials B1—B5 were designed by the Managements of the respective estates.

Only in plants was a statistically significant increase obtained. In this cycle, the standard estate dressing of two cwt/acre of sulphate of ammonia was significantly outyielded by a dressing of three cwt/acre of sulphate of ammonia plus six cwt/acre of ammonium phosphate. The design of the experiment did not allow of the effects of the nitrogen and phosphate being separately evaluated and it is possible that any increases in yield obtained are attributable to a simple response to nitrogen.

(B2). *Field Stewartville "F", Pln. Leonora* : In this experiment varying ratios and levels of nitrogen and phosphate are compared (See Table IV). While a significant difference between treatments is shewn in the plants, it is not possible from the design of the experiment to evaluate separately the relative effects of nitrogen and phosphate.

TABLE IV. (B2)

Effect of Sulphate of Ammonia and Phosphates on Pegassy Clay.

Treatments per Acre	Leonora, Field Stewartville "F". B 41227. Mean Yields in							
	Lbs./Acre.		Tons Cane/Acre.			Tons Sucrose/Acre.		
	N.	P_2O_5.	Plants.	1st Ratoons.	Total for 2 Crops.	Plants.	1st Ratoons	Total for 2 Crops.
1.5 cwt Amm Sulph + 3 cwt Amm Phos	147	155	50.34	43.48	93.82	7.49	6.59	14.08
0 " " " + 0 " " "	94	0	48.86	38.14	87.00	7.34	5.88	13.22
1.5 " " " + 4.5 cwt Amm Phos	97	230	47.10	36.96	84.06	7.05	5.60	12.65
3.0 " " " + 3 " " "	97	155	44.34	40.94	85.28	6.82	6.30	13.12
3.0 " " " + 0 " " "	113	155	45.43	37.76	83.19	6.66	5.63	12.29
3.25 " " " + 4.5 " " "	95	78	42.92	38.94	81.86	6.24	6.04	12.28
Mean:			46.50	39.37		6.93	6.01	
Significant Difference, 20:1:			4.45	—		.77	—	

(B3). *Field 76 R.P., Pln. Providence* : This experiment was designed to test the effectiveness of ammonium phosphate as a phosphatic fertilizer on pegassy clay. A comparison between ammonium phosphate and superphosphate of lime was also made and in addition the effect of placement of the fertilizers was investigated. The treatments were as follows :—

(1) 0.82 cwt/acre sulphate of ammonia + 2.26 cwt/acre ammonium phosphate.

(2) 2 cwt/acre sulphate of ammonia.

(3) 2 cwt/acre sulphate of ammonia + 6 cwt/acre superphosphate of lime.

TABLE V. (B3)

Results of a Phosphate Manurial Trial on Pegassy Clay.

Treatments per Acre.	Providence, Field 76 R.P. B. 34104. Mean Yields in									
	Lbs./Acre.		Tons Cane/Acre.				Tons Sucrose/Acre.			
	N.	P_2O_5.	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.
0.82 cwt. S.A. + 2.26 cwt. A.P. (E.M.)	47	124	23.71	34.24	43.35	101.30	3.45	4.11	5.92	13.43
0.82 ,, ,, + 2.26 ,, ,, (Placement)			24.19	38.16	40.92	103.27	3.36	4.73	5.51	13.60
2 ,, ,, + 6 ,, S.P. (E M.)	47	124	22.56	26.11	27.76	76.43	3.22	3.49	3.94	10.65
2 ,, ,, + 6 ,, ,, (Placement)			24.02	31.27	39.40	94.69	3.27	3.90	5.54	12.71
2 ,, ,, (E M.)	47	0	22.96	35.29	41.71	99.96	3.46	4.22	5.64	13.32
2 ,, ,, (Placement)			23.12	31.94	38.78	93.84	3.25	3.98	5.14	12.37
Mean :			23.43	32.83	38.65		3.33	4.07	5.28	
Significant Difference, 20 : 1 :			—	—	5.16		—	—	.83	

Statistically significant differences were obtained only for 2nd ratoons where in the case of the treatment in which 2 cwt/acre of sulphate of ammonia plus 6 cwt/acre of superphosphate of lime are used, placement of the fertilizers in a furrow 6 inches deep alongside the cane setts was definitely superior to the standard estate method of applying the fertilizers on the surface of the soil adjoining the cane stool. Although the differences are not significant, there are indications that ammonium phosphate is preferable to superphosphate of lime on the site of this experiment.

(B4). *Field 121/62 G.D., Pln. Diamond* : This experiment was designed mainly to test the effectiveness of the placement of fertilizers against the standard estate method of application. In addition, the effects of two levels of phosphate in conjunction with the usual basic dressing of sulphate of ammonia for ratoons were also compared. The treatments were as follows :—

(1) 4 cwt/acre of sulphate of ammonia + 40% phosphate fertilizer.

(2) 4 cwt/acre of sulphate of ammonia + 20% phosphate fertilizer.

(3) 4 cwt/acre of sulphate of ammonia.

TABLE VI. (B 4)

Results of a Phosphate Manurial Trial on Pegassy Clay.

Diamond, Field 121/62 G.D.

B. 41227, 1st Ratoons*.

Treatments per Acre.	Lbs./Acre.		Mean Yields in	
	N.	P_2O_5.	Tons Cane/Acre.	Tons Sucrose/Acre.
4 cwt. 40% P_2O_5 + 4 cwt. S.A. Surface	94	180	43.75	7.14
4 „ 40% „ + 4 „ „ Placement	94	180	40.90	6.66
4 „ 20% „ + 4 „ „ Surface	94	90	36.55	5.73
4 „ 20% „ + 4 „ „ Placement	94	90	35.87	6.01
4 „ S.A. Surface	94	0	38.68	6.27
4 „ S.A. Placement	94	0	41.81	6.70
Mean :			39.59	6.42
Significant Difference. 20 : 1 :			—	—

*No Analysis done for Plant Canes — Reaped by Estate.

There were no statistically significant differences either between methods of application of the fertilizer or between the two levels of phosphate applied.

(B5). *Field 127 G.D., Pln. Diamond* : The aims and treatments in this experiment were the same as in the preceding one except that the usual basic dressing for plants of 2 cwt/acre of sulphate of ammonia was applied.

The results of this experiment which are similar to those of the preceding one are presented in Table VII.

TABLE VII. (B5)

Results of a Phosphate Manurial Trial on Pegassy Clay.

Treatments per Acre.	Diamond, Field 127 G.D. B. 41227, Plants. Mean Yields in			
	Lbs./Acre.		Tons Cane/Acre.	Tons Sucrose/Acre.
	N.	P_2O_5.		
4 cwt. 20% P_2O_5. + 2 cwt. S.A. Surface	47	90	47.60	8.35
4 " 20% " + 2 " " Placement	47	90	45.10	7.80
2 " 40% " + 2 " " Surface	47	90	44.72	7.68
2 " 40% " + 2 " " Placement	47	90	41.10	6.72
2 " S.A. Surface	47	0	47.37	7.98
2 " S.A. Placement	47	0	41.93	7.08
Mean :			44.64	7.60
Significant Difference, 20:1:			—	—

SUB-SECTION C—SUMMARY.

(1) In none of the experiments with phosphate fertilizers reaped in 1952 was significant responses demonstrated.

(2) While there are some indications that ammonium phosphate might be a more effective source of phosphate than superphosphate of lime, the difference was not statistically significant at the 5% level.

(3) The yields resulting from placement of fertilizers did not show statistically significant differences from those that were obtained from the usual estate method of application.

	Estates	B. 34104	B. 41227	Co. 421	P.O.J. 2878	B. 40105	B. 4362	B.
Berbice.	Skeldon	3,201.90	451.00	—	—	—	—	
	Port Mourant	3,090.60	1,990.00	—	16.20	—	50.20	1
	Albion	3,345.90	1,232.50	—	2.70	—	—	9
	Rose Hall	3,030.90	1,815.00	—	—	.60	18.30	9
	Lochaber	322.00	23.00	14.00	77.00	—	—	
	Providence "B"	465.30	324.70	233.50	—	—	—	
	Blairmont	622.75	616.60	125.80	—	—	—	
	Bath	484.75	183.70	234.00	—	—	—	
	Total Dutch	14,564.10	6,636.50	607.30	95.90	.60	68.50	2,1
	Total English	15,306.87	6,974.96	638.27	100.79	.63	71.99	2,2
	%	48.34	22.03	2.02	.32	—	.23	
East Demerara.	Enmore	4,373.10	631 40	—	5.70	35.50	—	
	Lusignan	3,397.20	309.90	—	36.00	.20	—	
	L.B.I.	873.90	1,436.00	—	—	467.10	4.00	
	Ogle	1,049.10	765.10	—	2.30	27.60	2.50	
	Total Dutch	9,693.30	3,142.40	—	44.00	530.40	6.50	
	Total English	10,187.66	3,302.66	—	46.24	537.45	6.83	
	%	57.31	18.58	—	.26	3.14	.04	
Demerara River Banks.	Ruimveldt	72.50	299.00	—	—	—	22.50	
	Houston	623.26	252.00	—	—	—	2.00	
	Diamond	2,190.50	2,348.00	—	—	—	212.50	4
	Wales	2,192.90	1,145.80	—	—	.50	.10	1
	Versailles	1,817.30	308.00	—	—	—	3.00	
	Total Dutch	6,896.46	4,352.80	—	—	.50	240.10	6
	Total English	7,248.18	4,574.79	—	—	.53	252.35	7
	%	40.48	25.55	—	—	—	1.41	
West Demerara.	Leonora	1,622.30	557.50	—	—	—	24.00	2
	Uitvlugt	2,927.75	1,547.00	—	—	—	6.00	2
	Total Dutch	4,550.05	2,104.50	—	—	—	30.00	4
	Total English	4,782.10	2,211.83	—	—	—	31.53	4
	%	42.57	19.69	—	—	—	.28	
	Colony English	37,524.81	17,064.24	638.27	147.03	558.61	362.70	3,5
	%	47.75	21.72	.81	.19	.71	.46	

4098	Co. 419	D. 158/41	D. 49/41	D. 62/43	D. 37/45	D. 142/41	B. 37161	D. 14/34	M
92.90	129.00	26.40	—	—	—	64.50	668.60	—	
24.30	—	54.60	—	2.50	—	9.30	185.20	—	
93.80	—	11.00	9.30	6.20	—	79.30	154.90	170.20	
28.30	3.30	22.00	—	2.60	18.20	82.20	939.80	16.80	
—	—	—	—	—	—	—	—	—	
—	—	1.60	—	.60	—	1.00	255.60	533.00	
37.20	9.00	3.80	—	4.00	.05	60.80	585.65	616.70	
2.00	189.90	44.70	—	9.00	—	1.50	187.40	748.40	
78.50	331.20	164.10	9.30	24.90	18.25	298.60	2,977.15	2,085.10	
39.60	348.09	172.47	9.77	26.17	19.18	313.83	3,128.98	2,191.44	
7.23	1.10	.55	.03	.08	.06	.99	9.88	6.92	
—	—	—	—	—	—	—	126.30	—	
1.20	—	.50	—	7.30	3.30	24.00	292.00	162.70	
24.00	48.20	2.80	27.30	1.50	—	98.70	866.20	321.80	
56.10	—	70.60	104.10	26.00	—	38.10	807.70	160.70	
01.30	48.20	73.90	131.40	34.80	3.30	160.80	2,092.40	645.20	
05.96	50.66	77.67	138.10	36.57	3.47	169.00	2,199.11	678.11	
.54	.28	.44	.78	.21	.02	.95	12.37	3.81	
38.50	—	9.00	—	4.50	5.00	34.00	100.00	160.00	
16.00	—	—	—	4.00	3.00	—	25.00	222.02	
.8 50	—	—	—	26.50	—	182.00	2,796.00	64.50	
34.60	537.30	52.70	.10	2.66	.10	26.80	82.80	—	
1.20	1.20	15.00	50.60	18.80	13.00	195.00	91.00	126.20	
78.80	538.50	76.70	50.10	55.80	21.10	437.80	3,094.80	572.72	
83.42	565.96	80.61	52.66	58.65	22.18	460.13	3,252.63	601.93	
3.99	3.16	.45	.29	.33	.12	2.57	18.17	3.36	
59.00	10.00	—	—	20.40	—	167.60	1,564.20	69.50	
03.25	94.00	—	—	62.25	—	150.00	1,048.25	295.25	
32.25	104.00	—	—	82.65	—	317.60	2,612.45	364.75	
35.82	109.30	—	—	86.87	—	333.80	2,745.68	383.35	
4.33	.97	—	—	.77	—	2.97	24.44	3.41	
34.80	1,074.01	330.75	200.53	208.26	44.83	1,276.76	11,326.40	3,854.83	
4.56	1.37	.42	.26	.27	.06	1.63	14.41	4.91	

of Varieties for the Year 1953.

Diamond 10	New Seedlings	B. 40102	B. 46378	B. 43253	D. 26/39	B. 47225	D. 200/36	D. 25/38	B.
—	—	—	—	—	—	—	—	—	
—	—	.10	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	1.20	—	—	10.00	7.00	
—	—	.10	—	1.20	—	—	10.00	7.00	
—	—	.11	—	1.26	—	—	10.51	7.36	
—	—	—	—	—	—	—	.03	.02	
—	45.60	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	119.80	—	.20	—	—	—	—	—	
2.70	—	—	—	—	—	—	—	—	
2.70	165.40	—	.20	—	—	—	—	—	
2.84	173.84	—	.21	—	—	—	—	—	
.01	.98	—	—	—	—	—	—	—	
5.50	—	—	—	—	—	—	—	—	
—	—	—	2.00	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	2.00	—	—	—	—	—	
5.50	—	—	4.00	—	—	—	—	—	
5.78	—	—	4.20	—	—	—	—	—	
.04	—	—	.02	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	4.00	15.25	1.25	1.25	—	—	
—	—	—	4.00	15.25	1.25	1.25	—	—	
—	—	—	4.20	16.03	1.31	1.31	—	—	
—	—	—	.04	.14	.01	.01	—	—	
8.62	173.84	.11	8.61	17.29	1.31	1.31	10.51	7.36	
.01	.22	—	.01	.02	—	—	.02	.01	

4341	B. 4466	B. 4448	B. 44244	B. 44111	B. 43413	B. 37172	B. 41211	Total
—	—	—	—	—	—	—	—	4,634.30
—	—	—	—	—	—	.10	—	5,544.50
—	—	—	—	—	—	5.60	7.00	6,022.60
—	—	—	—	—	—	—	—	6,881.40
—	—	—	—	—	—	—	—	436.00
—	—	—	—	—	—	—	—	1,815.30
—	—	—	—	—	—	—	—	2,708.85
—	—	—	—	—	—	—	—	2,085.35
—	—	—	—	—	—	5.70	7.00	30,128.30
—	—	—	—	—	—	5.99	7.36	31,664.84
—	—	—	—	—	—	.02	.02	100.00
—	—	—	—	—	—	—	—	5,217.80
.20	4.00	3.10	1.90	1.60	20.00	—	—	4,282.10
—	—	—	—	—	—	—	—	4,291.50
—	—	—	—	—	—	—	—	3,122.60
.20	4.00	3.10	1.90	1.60	20.00	—	—	16,914.00
.08	4.20	3.26	2.00	1.68	21.02	—	—	17,776.61
.10	.02	.02	.01	.01	.12	—	—	100.00
—	—	—	—	—	—	—	—	750.50
—	—	—	—	—	—	—	—	1,149.28
—	—	—	—	—	—	—	—	8,248.50
—	—	—	—	—	—	—	—	4,175.70
—	—	—	—	—	—	—	—	2,711.70
—	—	—	—	—	—	—	—	17,035.68
—	—	—	—	—	—	—	—	17,904.50
—	—	—	—	—	—	—	—	100.00
—	—	—	—	—	—	—	—	4,294.50
—	—	—	—	—	—	—	—	6,395.00
—	—	—	—	—	—	—	—	10,689.50
—	—	—	—	—	—	—	—	11,234.66
—	—	—	—	—	—	—	—	100.00
8.08	4.20	3.26	2.00	1.68	21.02	5.99	7.36	78,580.61
.02	—	—	—	—	.03	—	.01	100.00

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XVIII.

BY

L. S. BIRKETT, *Sugar Agronomist.*

VARIETAL COMPOSITION OF THE 1953 HARVESTS.

The tables summarising the variety position for 1953 have been prepared along similar lines to those published in recent Bulletins. They contain data abstracted from returns supplied by the Sugar Estates and refer only to estate-grown canes, which however, represent 98% of the sugar production of the Colony.

Table I represents the varietal position on an estate basis, while Table II summarises that information for the Colony as a whole.

Table III shows the acreage occupied by the varieties which make up the 'other canes' category in Table II. Table IV summarises the areas under the various varieties on the sugar estates of British Guiana over the period 1942—1953.

TABLE I. (facing this page—inset).

TABLE II.—**Percentage Distribution of the Varieties to be Reaped in 1953.**

Variety.	Total English Acres in the Colony.	Percentage.				
		In West Demerara.	Along Demerara River Banks.	In East Demerara.	In Berbice.	Colony.
B. 34104	35,703.91	12.7	19.3	27.2	40.8	47.7
B. 41227	16,236.20	12.9	26.8	19.4	40.9	21.7
B. 37161	10,776.80	24.3	28.7	19.4	27.6	14.4
D. 14/34	3,667.77	10.0	15.6	17.6	56.8	4.9
B. 4098	3,410.85	13.5	19.9	2.7	63.9	4.6
D. 142/41	1,214.80	26.2	36.0	13.2	24.6	1.6
Co. 419	1,021.90	10.2	52.7	4.7	32.4	1.4
Other Canes	725.30	8.1	12.5	53.0	16.4	1.0
Co. 421	607.30	—	—	—	100.0	.8
B. 40105	531.50	—	.1	99.8	.1	.7
B. 4362	345.10	8.7	69.6	1.9	19.8	.5
D. 158/41	314.70	—	24.4	23.5	52.1	.4
D. 62/43	198.15	41.6	23.2	17.6	12.6	.3

TABLE III.—**Acreages of the Varieties Constituting "Other Canes."**

Variety.	English Acres.		Variety.	English Acres.		Variety.	English Acres.	
	1952	1953		1952	1953		1952	1953
P.O.J. 2878	188	147	D. 37/45	—	45	B. 43413	—	21
Diamond 10	—	9	B. 37172	14	6	B. 44341	—	18
D. 200/36	—	11	B. 40102	133	—	B. 46378	—	9
D. 25/38	50	7	B. 43253	—	17	New Seedlings	4	174
D. 49/41	194	201						

TABLE IV.—Comparison of Areas Under Various Cane Varieties in Brit's Guiana. 1942—1953.

Variety.	Per cent of Total Areas is the Colony.											
	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
P.O.J. 2878	68.8	68.0	65.1	54.8	40.4	27.6	13.6	6.9	1.6	0.4	—	—
Diamond 10	28.1	26.5	25.5	26.7	25.4	21.6	14.4	8.4	3.1	0.9	0.4	—
D. 166/34	—	1.6	2.2	2.2	1.6	1.0	0.5	—	—	—	—	—
Co. 419	—	1.3	3.0	4.9	6.5	7.7	8.2	6.8	4.5	2.7	1.7	1.4
Co. 421	—	—	1.6	6.3	15.1	19.4	19.3	14.2	8.5	3.5	2.1	0.8
D. 14/34	—	—	—	2.7	6.4	11.3	17.4	20.6	20.2	15.0	8.6	4.9
B. 34104	—	—	—	—	1.6	7.6	22.6	39.8	58.4	67.4	60.2	47.7
D. 200/36	—	—	—	—	—	1.5	1.9	1.7	0.7	—	—	—
B. 4098	—	—	—	—	—	—	—	—	—	—	1.3	4.6
B. 37161	—	—	—	—	—	—	—	—	1.4	3.6	9.4	14.4
B. 40105	—	—	—	—	—	—	—	—	—	—	0.5	0.7
B. 41227	—	—	—	—	—	—	—	—	0.3	3.8	12.7	21.7
D. 142/41	—	—	—	—	—	—	—	—	0.2	1.4	1.6	1.6
D. 158/41	—	—	—	—	—	—	—	—	—	—	0.3	0.4
D. 62/43	—	—	—	—	—	—	—	—	—	—	—	0.3
B. 4362	—	—	—	—	—	—	—	—	—	—	—	0.5
Other Canes	3.1	2.6	2.6	2.4	3.0	2.3	2.1	1.6	1.1	1.3	1.2	1.0

It will be seen from the data tabulated in Table IV that B.34104 still occupies the greater part of the acreage under cane on the estates *i.e.* 47.7%. The percentage of the acreage in this variety for reaping in 1953 has however, fallen by approximately 13% and owing to its marked susceptibility to 'Leaf Scald' disease it is likely that future plantings will consist almost entirely of varieties more resistant to the disease than is B.34104.

The varieties which are mainly displacing B.34104 are B.41227, B.37161 and B.4098 while some interest is also being shewn in the varieties B.4362, B.4373, D.62/43, D.37/45 and D.158/41. Of these, B.4362, B.41227, B.37161 and D.62/43 are rated as susceptible to 'Leaf Scald' disease. D.37/45 and D.158/41 as tolerant and B.4373 and B.4098 as resistant.

The chief characteristics of these varieties have already been given. (See pages 20—24).

CYCLE AGE OF CROPS.

Table V summarises the distribution of the acreage under cane in plants and the various categories of ratoons for the period 1945 to 1953.

It will be noted that there has been a slight increase in the percentage of 4th ratoons and a slight decrease in the percentage of plants.

TABLE V.—**Cycle Age of the Crops, 1945—1953.**

Category.	Percentages.								
	1945	1946	1947	1948	1949	1950	1951	1952	1953
Plants	24.9	29.3	28.4	31.3	31.2	33.1	28.8	27.8	26.1
1st Ratoons	17.2	23.6	27.0	26.1	26.5	27.4	28.2	23.4	23.9
2nd Ratoons	24.0	16.4	22.3	24.5	24.8	23.3	24.4	23.7	22.4
3rd Ratoons	22.3	18.2	11.8	14.3	15.2	12.6	15.1	18.8	18.2
4th Ratoons	9.1	10.1	7.0	2.5	2.0	3.1	3.0	5.4	8.5
5th Ratoons	2.5	2.4	3.5	1.3	.3	.5	.5	.9	.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

COMMERCIAL YIELDS.

The tables showing the yields of the various varieties under estate conditions have again been drawn up on a regional basis. The estates included in the four categories are as follows :—

East Coast Demerara (Table VI A)— Plns. Ogle, La Bonne Intention, Lusignan and Enmore ;

West Coast Demerara (Table VI B)— Plns. Uitvlugt *cum annexis* and Leonora and Cornelia Ida ;

Demerara River Banks (Table VI C)— Plns. Diamond *cum annexis* (including Peter's Hall, Providence and Farm), Ruimveldt, Houston, Versailles, Schoon Ord and Wales ;

Berbice (Table VI D)— Plns. Blairmont, Bath, Providence, Rose Hall, Albion, Port Mourant and Skeldon.

The data contained in Tables VI A, B, C, and D are summarised for the whole Colony in Table VI E. Undue importance should not be attached to the returns from small acreages and an arbitrary standard of 100 acres has been selected as the minimum for which performance data may be considered reliable.

TABLE VIa.—**Weighted Mean Commercial Yields in East Demerara, 1952.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant Canes.			
		100 Acres and over.			
B. 41227	855.9	13.88	81.69	—	4.06
B. 37161	578.7	13.94	82.08	—	3.85
B. 40105	227.0	14.56	82.33	—	3.60
B. 34104	2,222.3	14.13	82.52	—	3.40
		Under 100 Acres.			
Co. 419	9.2	13.24	81.86	—	5.00
D. 62/43	4.0	14.83	84.26	—	4.50
D. 158/41	18.7	13.53	80.72	—	4.06
P.O.J. 2878	42.7	15.14	82.75	—	2.81
D. 49/41	4.1	13.76	83.60	—	1.71
		First Ratoons.			
		100 Acres and over.			
B. 37161	185.0	13.61	81.71	—	3.67
B. 41227	412.1	14.11	81.93	—	3.62
B. 34104	3,100 6	13.74	81.89	—	3.54
D. 142/41	103.3	13.80	80.89	—	2.94
		Under 100 Acres.			
D. 158/41	27.2	14.77	82.51	—	3.97
D. 49/41	91.1	14.24	82.69	—	3.74
B. 40102	57.3	11.82	77.48	—	3.63
B. 40105	68.8	13.64	80.92	—	3.47
D. 14/34	94.2	14.44	82.10	—	3.31
		Second Ratoons.			
		100 Acres and over.			
B 34104	2,169.3	14.37	82.91	—	3.40
D. 14/34	834 1	14.04	82 38	—	3.13
		Under 100 Acres.			
B. 40105	24.7	13.63	81.16	—	3.73
Mixed	8.6	13.60	80.09	—	3.72
B. 40102	62.5	13 37	79.87	—	3.58
B. 37161	76.0	14.34	82.15	—	3.51
Seedlings	3.2	15.04	85.22	—	3.44
D. 49/41	38.9	13.94	83.39	—	3.34
B. 41227	60.0	14.21	81.95	—	2.77
D. 142/41	42.5	14.54	82 33	—	2.11
		Third Ratoons.			
		100 Acres and over.			
D. 14/34	605.5	13.76	82.31	—	2.92
B. 34104	2,224.9	12.82	74.84	—	2.84
		Under 100 Acres.			
B. 41227	9.0	15 21	83.83	—	4.44
B. 40102	6.3	12.50	79.83	—	3.81
D. 49/41	5.3	13.77	82.21	—	3 58
B. 37161	10.5	12.96	79.55	—	3.43
B. 40105	2 5	12.50	79.83	—	3.20
Co. 419	54.4	13.52	82 18	—	3.18
Diamond 10	48.4	13 55	82.49	—	3.02
D. 40/41	9.0	14.38	83.02	—	2.67
D. 142/41	8.5	14.40	81.82	—	2.59
		Fourth Ratoons.			
		100 Acres and over.			
B. 34104	256.9	13.59	81.50	—	3.20
		Fifth Ratoons.			
		Under 100 Acres.			
D. 200/36	30.0	14.92	84.77	—	2 93

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VIb.—**Weighted Mean Commercial Yields in West Demerara, 1952.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
B. 37161	947.8	14.88	83.95	—	4.54
B. 41227	607.2	14.93	83.69	—	4.13
B. 34104	229.2	15.44	85.54	—	3.96
		Under 100	*Acres.*		
B. 4098	90.4	13.91	81.72	12.13	5.11
D. 142/41	45.8	14.91	83.27	13.86	4.10
B. 43253	4 0	15.05	80.48	—	4.00
Mixed	8.3	14.90	82.87	—	3.73
D. 62/43	39.3	14.09	81.21	—	3.72
		First 100 Acres	*Ratoons. and over.*		
B. 37161	248.4	14.91	83.95	13.94	4.26
B. 41227	246.3	14.46	82.42	13.98	3.93
D. 142/41	258.6	14.45	83.08	—	3.85
B. 34104	1,809.6	14.83	83.89	13.79	3.21
		Under 100	*Acres.*		
B. 4098	16.8	13.33	79.28	12.09	3.58
Mixed	5.5	14.82	83.87	—	2.85
D. 14/34	23.0	15.99	85.30	—	2.65
		Second 100 Acres	*Ratoons. and over.*		
D. 14/34	452.0	15.32	85.31	13.79	3.02
B. 34104	2,768.6	15.14	84.48	13.95	2.74
		Under 100	*Acres.*		
D. 142/41	37.0	15 98	84.97	13.86	3.95
B. 37161	89.7	14.50	82.36	—	3.74
B. 41227	7.0	12.67	76.80	—	3.71
Mixed	7.8	15.36	84.74	—	2.34
Co. 419	43 8	15.69	85.39	12.18	2.08
		Third 100 Acres	*Ratoons. and over.*		
B. 34104	1,179.0	14.85	83.82	—	3.19
D. 14/34	377.9	15.03	84 59	13.80	2.69
		Under 100	*Acres.*		
D. 142/41	9.5	14.28	84.00	—	4.63
B. 41227	10.9	18 22	87.88	13.90	4.19
B. 37161	35.0	15.77	86.24	—	4 14
Mixed	9.5	14.95	84.27	—	3.89
Co. 419	90.8	15.83	84.09	—	2.61
		Fourth 100 Acres	*Ratoons. and over.*		
B. 34104	501.0	14.49	83.98	—	3.08
		Under 100	*Acres.*		
B. 37161	9.8	14.89	84.12	—	1.98
D. 26/39	1.3	15.71	85.06	—	1.68
D. 14/34	64.0	16.23	85.38	—	1.61
		Fifth 100 Acres	*Ratoons. and Over.*		
B. 34104	129.0	14.41	82.77	—	2.72

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VIc.—**Weighted Mean Commercial Yields along Demerara River Banks, 1952.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant Canes. 100 Acres and Over.			
B. 4098	138.0	13.74	82.94	—	4.70
B. 41227	1,580.2	14.56	83.38	13.66	4.22
Co. 419	286.9	13.46	80.48	—	4.17
B. 37161	896.4	14.40	83.49	13.89	4.09
B. 34104	737.3	14.32	82.84	13.00	3.76
D. 14/34	184.0	13.73	82.50	13.01	2.35
		Under 100 Acres.			
B. 4362	47.5	14.58	83.56	—	5.56
D. 26/39	2.0	13.78	84.00	—	5.50
D. 49/41	18.0	15.38	83.84	—	4.46
D. 158/41	11.9	14.17	82.34	—	4.02
Seedlings	3.0	15.02	82.93	—	4.00
D. 142/41	69.4	14.03	82.28	—	3.56
D. 62/43	21.8	14.62	84.37	—	3.45
		First Ratoons. 100 Acres and Over.			
B. 41227	779.5	14.37	83 45	13.99	3.95
B. 37161	829.2	14.73	83.98	14.06	3.84
D. 142/41	229.0	14.96	84.37	13.92	3.36
D. 14/34	194.4	14.82	83.75	13.43	3.33
B. 34104	1,953.1	14.43	83.27	13.11	3.27
D. 62/43	175.0	13.71	82.00	13.00	2.57
		Under 100 Acres.			
B. 4362	2.0	14.92	83.80	—	5.00
D. 158/41	11.8	14.81	83.65	14.10	4.72
B. 4098	13.0	15.81	85.49	13.98	4.08
D. 49/41	11.5	13.68	82.42	—	3.92
Co. 419	10.4	13.67	82.85	—	3.20
Mixed	1.0	16.47	86.23	—	2.01
		Second Ratoons. 100 Acres and Over.			
B. 37161	495.5	14.61	84.31	14.00	4.27
B. 34104	2,802.8	14.69	84.07	13.80	3.29
D. 14/34	461.2	14.96	84.17	13.57	3.12
B. 41227	116.2	13.57	82.88	13.00	3.06
		Under 100 Acres.			
D. 142/41	27.8	14.99	83.03	13.60	3.95
Mixed	2.0	15.04	83.54	—	3.50
P.O.J. 2878	3.2	14.42	82.88	—	1.69
		Third Ratoons. 100 Acres and Over.			
B. 34104	2,311.0	13.87	83.27	13.07	3.12
D. 14/34	303.5	14.05	82.53	13.28	2.84
		Under 100 Acres.			
B. 37161	35.0	15.05	83.54	—	3.80
P.O.J. 2878	29.0	14.50	82.46	—	2.24
Diamond 10	24.5	16.26	86.33	13.92	2.08
		Fourth Ratoons. 100 Acres and Over.			
Co. 419	196.5	14 80	83.87	—	3.57
B. 34104	467.5	14.14	83.13	—	3.43
		Under 100 Acres.			
D. 14/34	12.0	14.46	83.25	—	4.42
		Fifth Ratoons. 100 Acres and Over.			
Diamond 10	150.0	14.42	83.16	—	3.47

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VId.—**Weighted Mean Commercial Yields in Berbice, 1952.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
D. 158/41	106.1	15.27	83.41	—	4.61
B. 41227	3,046.5	14.71	82.52	—	3.92
B. 34104	1,991.2	15.51	83.13	—	4.30
B. 4098	382.5	14.25	81.24	—	3.75
B. 37161	1,161.3	13.85	81.21	—	3.63
D. 142/41	102.0	13.62	80.12	—	2.87
D. 14/34	455.1	15.64	84.19	—	2.82
		Under 100	*Acres.*		
Mixed	3.1	14.77	83.65	—	4.66
B. 4362	2.4	13.08	82.52	—	3.78
Co. 419	3.3	11.38	75.36	—	3.64
P.O.J. 2878	16.2	16.00	85.15	—	3.26
D. 62/43	7.0	14.56	83.78	—	3.17
		First 100 Acres	*Ratoons. and over.*		
B. 41227	446.0	14.29	81.46	—	3.98
B. 37161	156.3	13.92	80.40	—	3.94
B. 34104	4,241.9	14.94	83.32	—	3.79
D. 142/41	124.0	14.33	80.60	—	3.56
D. 14/34	513.5	15.09	83.77	—	3.44
		Under 100	*Acres.*		
D. 158/41	10.2	15.07	83.28	—	5.13
B. 37172	3.0	16.92	85.03	—	4.57
B. 4098	97.8	14.03	81.37	—	3.84
D. 49/41	9.3	15.07	83.05	—	3.82
Mixed	3.0	14.79	83.77	—	3.70
B. 43253	1.2	13.94	81.99	—	3.63
B. 4362	.6	13.40	79.76	—	3.33
Co. 421	61.8	11.74	78.66	—	1.13
		Second 100 Acres	*Ratoons. and over.*		
B. 34104	4,858.2	14.67	82.66	—	3.38
Co. 421	170.5	14.53	82.33	—	3.19
D. 14/34	784.0	15.56	84.10	—	2.94
Co. 419	198.2	13.48	80.04	—	2.88
		Under 100	*Acres.*		
Mixed	1.0	15.30	83.60	—	5.30
B. 41227	13.6	15.02	83.76	—	4.79
B. 37161	87.1	12.87	79.07	—	3.88
B. 41211	6.3	12.32	76.40	—	3.81
D. 158/41	.7	14.84	83.30	—	3.57
B. 37172	1.9	12.74	79.69	—	3.54
D. 142/41	32.3	13.84	80.67	—	3.21
B. 40102	.1	14.64	84.87	—	.85
		Third 100 Acres	*Ratoons. and over.*		
B. 34104	4,160.4	14.87	82.69	—	3.43
Co. 421	1,140.6	14.26	81.55	—	2.92
D. 14/34	812.0	14.85	83.20	—	2.92
Co. 419	200.5	13.44	79.66	—	2.85
		Under 100	*Acres.*		
B. 41227	35.5	14.50	82.46	—	4.35
B. 37161	47.2	14.03	81.25	—	4.04
B. 37172	.8	13.79	81.04	—	4.00
B. 4098	1.4	14.64	82.20	—	3.50
Mixed	1.0	13.90	81.62	—	3.00
D. 200/36	9.0	12.44	82.21	—	2.85
D. 142/41	2.9	13.36	81.80	—	2.83
D. 25/38	48.0	14.30	82.17	—	2.69
D. 158/41	1.1	15.56	84.30	—	2.46
B. 41211	.7	12.83	77.29	—	2.29
		Fourth 100 Acres	*Ratoons. and over.*		
B. 34104	1,953.8	14.07	81.93	—	3.19
D. 14/34	269.1	14.33	82.11	—	2.88
Co. 421	145.4	13.97	81.71	—	2.60
		Under 100	*Acres.*		
B. 37161	.3	14.65	85.20	—	4.67
B. 41227	4.0	11.80	76.60	—	3.40
D. 200/36	9.0	14.05	81.77	—	2.84
Co. 419	23.0	13.85	79.53	—	2.80
D. 25/38	18.0	13.42	82.54	—	2.42
Diamond 10	70.0	14.61	81.87	—	2.20
		Fifth Under 100	*Ratoons. Acres.*		
Co. 419	93.9	11.39	74.49	—	3.44
B. 34104	62.5	15.05	82.94	—	3.41
D. 200/36	10.0	14.57	81.96	—	3.31
D. 14/34	34.4	12.57	79.16	—	3.10

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VIe.—**Weighted Mean Commercial Yields under Estate Conditions, 1952.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
Co. 419	299.4	13.43	80.47	—	4.19
B. 4098	610.9	14.08	81.69	12.13	4.17
B. 37161	3,584.2	14.27	82.64	13.89	4.04
B. 41227	6,089.7	14.58	82.74	13.66	4.04
D. 158/41	136.7	14.94	82.95	—	4.02
B. 34104	5,180.0	14.75	82.93	13.00	3.63
B. 40105	227.0	14.56	82.33	—	3.60
D. 142/41	217.1	14.02	81.47	13.86	3.35
D. 14/34	639.1	15.09	83.70	13.01	2.68
		Under 100	*Acres.*		
D. 26/39	2.0	13.78	84.00	—	5.50
B. 4362	49.9	14.51	83.51	—	5.47
Seedlings	3.0	15.02	82.93	—	4.00
B. 43253	4.0	15.05	80.48	—	4.00
D. 49/41	22.1	15.08	82.17	—	3.95
Mixed	11.4	14.87	83.08	—	3.82
D. 62/43	72.0	14.34	82.58	—	3.63
P.O.J. 2878	58.9	15.38	83.41	—	2.93
		First 100 Acres	*Ratoons. and over.*		
B. 37161	1,418.9	14.52	83.28	14.00	3.90
B. 41227	1,883.9	14.30	82.51	13.98	3.88
B. 4098	127.6	14.12	81.52	13.05	3.83
D. 49/41	111.9	14.26	82.70	—	3.77
B. 34104	11,105.2	14.50	83.01	13.45	3.53
D. 142/41	714.9	14.50	82.74	—	3.51
D. 14/34	825.1	14.98	83.62	13.43	3.38
D. 62/43	175.0	13.71	82.00	13.00	2.57
		Under 100	*Acres.*		
B. 4362	2.6	14.57	82.87	—	4.62
B. 37172	3.0	16.92	85.03	—	4.57
D. 158/41	49.2	14.84	82.94	14.10	4.40
B. 40102	57.4	11.82	77.49	—	3.63
B. 43253	1.2	13.94	81.99	—	3.63
B. 40105	68.8	13.64	80.92	—	3.47
Co. 419	10.4	13.67	82.85	—	3.20
Mixed	9.5	14.99	84.09	—	3.03
Co. 421	61.8	11.74	78 66	—	1.13
		Second 100 Acres	*Ratoons. and over.*		
B. 37161	748.3	14.36	83.25	14.00	4.08
B. 34104	12,598.9	14.73	83.41	13.87	3.23
D. 142/41	139.6	14.85	82.78	13.73	3.22
Co. 421	170.5	14.53	82.32	—	3.19
B. 41227	196.8	13.83	82 44	13.00	3.11
D. 14/34	2,531.3	14.91	83.76	13.68	3.05
Co. 419	242.0	13.88	81.01	12.18	2.74
		Under 100	*Acres.*		
B. 41211	6.3	12.32	76.40	—	3.81
B. 40105	24.7	13.63	81.61	—	3.73
B. 40102	62.6	13.37	79.88	—	3.58
D. 158/41	.7	14.84	83.30	—	3.57
B. 37172	1.9	12.74	79.69	—	3.54
Seedlings	3.2	15.04	85.22	—	3.44
D. 49/41	38.9	13.94	83.39	—	3.34
Mixed	19.4	14.54	82.49	—	3.23
P.O.J. 2878	3.2	14.42	82.88	—	1.69
		Third 100 Acres	*Ratoons. and over.*		
B. 37161	127.7	14.70	83 11	—	3.95
B. 34104	9,875.3	14.17	81.19	13.07	3.20
Co. 421	1,140.6	14.26	81.55	—	2.92
D. 14/34	2,098.9	14.45	83.10	13.54	2.87
Co. 419	345.7	14 08	81.22	—	2.84
		Under 100	*Acres.*		
B. 41227	55.4	15.35	83.75	13.90	4.33
B. 37172	.8	13.79	81.04	—	4.00
B. 40102	6.3	12.50	79.83	—	3.81
Mixed	10.5	14.85	84.02	—	3.81
D. 49/41	5.3	13.77	82.21	—	3.58
D. 142/41	20.9	14.20	82.81	—	3.55
B. 4098	1.4	14.64	82.20	—	3.50
B. 40105	2.5	12.50	79.83	—	3.20
D. 200/36	9.0	12.44	82.21	—	2.85
Diamond 10	72.9	14.46	83.78	13.92	2.71
D. 25/38	48.0	14.30	82.17	—	2.69
D. 40/41	9.0	14.38	83.02	—	2.67
D. 158/41	1.1	15.56	84.30	—	2.46
B. 41211	.7	12.83	77.29	—	2.29
		Fourth 100 Acres	*Ratoons. and over.*		
Co. 419	219.5	14.70	83.42	—	3.49
B. 34104	3,181.2	14.11	82.40	—	3.21
D. 14/34	345.1	14.68	83.55	—	3.19

FERTILIZERS IN 1952.

Table VII presents statistics relative to the value and quantity of fertilizers used on the sugar estates in British Guiana for the years 1950, 1951 and 1952. The data presented in this table has been kindly supplied by estate Managers.

TABLE VII.—Values and Quantities of Fertilizers Used on British Guiana Sugar Estates, 1950—1952.

Fertilizers.	Value, $			Per cent. of Total Value.			Per Ton, $			Quantity, Tons.			Per cent. of Total Quantity.		
	1950	1951	1952	1950	1951	1952	1950	1951	1952	1950	1951	1952	1950	1951	1952
Ammonium Sulphate	1,501,400.71	1,777,813.78	2,174,427.77	91.4	90.7	91.9	113.31	128.00	148.42	13,250.17	13,889.47	14,650.72	68.0	66.9	63.7
Calcium Cyanamide	4,535.73	992.00	489.80	.3	.1	...	126.24	124.00	124.00	35.93	8.00	3.95	.1	...	...
Basic Slag	12,812.85	62,539.90	20,188.88	.7	3.2	.9	59.27	78.50	108.95	216.18	796.70	185.30	1.3	3.8	.8
Superphosphate	595.95	451.80	4,336.20	.1	...	.2	58.89	62.75	69.50	10.12	7.20	62.39	...	...	.3
Rock Phosphate	22,403.86	990.21	3,382.52	1.4	...	.1	38.02	40.83	37.79	589.25	24.25	89.50	3.0	.2	.4
Limestone	100,023.61	116,960.73	162,362.07	6.1	6.0	6.9	18.65	19.36	20.25	5,363.60	6,040.48	8,016.13	27.6	29.1	34.8
TOTAL	1,641,772.71	1,959,748.42	2,365,187.24	100.0	100.0	100.0	...	...	...	19,465.25	20,766.10	23,007.99	100.0	100.0	100.0

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1952.

STAFF.

L. S. Birkett, A.I.C.T.A., Dip. Agri. (I.C.T.A.)	*Sugar Agronomist, (from December).*
C. Cameron	*Sugar Agronomist acting, (to November).*
H. I. Gomes	*Field Assistant.*
G. L. Knight	*Field Assistant.*
S. L. Cameron	*Field Assistant, (from February).*
C. A. V. Smith	*Laboratory Assistant, (to April).*
S. Mangra	*Laboratory Assistant, (from May).*
K. Chung	*Statistical Assistant, (from May).*
D. K. Cameron	*Typist, (to August).*
S. Buchanan	*Typist, (from September).*

2. Mr. L. S. Birkett assumed duty as Sugar Agronomist at the Sugar Experiment Station on the 1st December, 1952.

3. Mr. Knight was promoted to the post of Second Field Assistant on the 1st February, 1952.

Subsequent to Mr. Knight's promotion, Mr. S. Cameron was appointed Third Field Assistant on the 1st February, 1952.

4. Mr. Smith resigned the post of Laboratory Assistant at the end of April to take up an appointment as Technical Assistant in the Department of Agriculture.

The vacant post of Laboratory Assistant was filled by Mr. S. Mangra on the 1st May, 1952.

5. Mr. K. Chung was appointed Statistical Assistant on the 1st May, 1952.

6. Miss D. Cameron resigned as Typist in August and Miss S. Buchanan was appointed to the post in September, 1952.

7. Absences of the Staff from duty during the year were as follows :—

	Casual Leave.	*Sick Leave.*	*Vacation Leave.*
Mr. Cameron	—	12. 5.52—16. 5.52	—
Mr. Gomes	—	4.11.52—27.11.52	1.6.52—31.8.52

COMMITTEE.

8. The following members formed the British Guiana Sugar Experiment Stations' Committee for the year :—

The Director of Agriculture	*Chairman.*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. L. S. Birkett	*Messrs. S. Davson & Co., Ltd., (to October).*
Mr. H. F. Chapman	*Messrs. S. Davson & Co., Ltd., (from October).*
Mr. G. M. Eccles	*Messrs. S. Davson & Co., Ltd., (from October).*
Mr. H. R. Barnwell	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. H. A. Barclay	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. R. F. Milne	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. S. A. Angoy	*Department of Agriculture— Secretary.*

RESEARCH SUB-COMMITTEE.

9. The following members formed the British Guiana Sugar Experiment Stations' Research Sub-Committee for the year :—

The Director of Agriculture	*Chairman.*
Mr. L. D. Cleare	*Deputy Director of Agriculture.*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. J. F. Williams	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. L. S. Birkett	*Messrs. S. Davson & Co., Ltd., (to October).*
Mr. H. F. Chapman	*Messrs. S. Davson & Co., Ltd., (from October).*
Mr. H. R. Barnwell	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. M. D. Ffrench-Mullen	*Chief Research Officer, Department of Agriculture, (to June).*
Mr. C. Cameron	*Sugar Agronomist (Actg.), (to November).*
Mr. J. S. Robertson	*Plant Pathologist, Department of Agriculture.*
Mr. S. A. Angoy	*Secretary.*

FINANCE.

10. The sum of $51,719.00 was voted from the funds of the Sugar Experiment Stations' Committee for the working of the Station during the year; the total amount expended was $49,466.34. Of the amount spent from the Stations' vote, the sum of $1,332.85 was used for wages in connection with Leaf Scald Investigational work. This amount was refunded by Government.

11. Receipts from assessments for the year amounted to $11,826.35, those from sale of canes to $22,242.74 and miscellaneous receipts to $2,482.06.

SEEDLINGS INTRODUCED.

12. Cane varieties received during the year from the Central Breeding Station, Barbados, B.W.I. were as follows : B.49119, B.49282, B.5011, B.5019, B.5028, B.5037, B.5041, B.5047, B.5073, B.5098, B.50109, B.50112, B.50115, B.50126, B.50135, B.50141, B.50153, B.50155, B.50166, B.50184, B.50210, B.50267, B.50268, B.50275, B.50311, B.50345, B.50347, B.50352, B.50370, B.50377.

TABLE I.—**Barbados Seedlings in Tests and Undergoing Multiplication etc., December, 1952.**

Year.	Number of Seedlings	
	In Test	Under Multiplication, etc.
1934	1	—
1937	2	—
1940	2	—
1941	1	—
1942	1	—
1943	7	2
1944	8	1
1945	16	17
1946	33	36
1947	34	40
1948	26	25
1949	—	29
Total	131	150

TABLE II.—**Demerara Seedlings in Tests and Undergoing Multiplication etc., December, 1952.**

Year.	Number of Seedlings.	
	In Test.	Under Multiplication, etc.
1943	4	1
1944	2	—
1945	39	13
1946	61	10
1947	Breeding work ceased in 1946	
Total	106	24

EXPERIMENTS.

13. Experiments reaped during the year have been fully reported on elsewhere in this Bulletin. These consisted of 45 variety and 7 manurial Trials. At the end of the year there were 58 variety, 7 variety-sorting and 9 manurial trials in progress.

MISCELLANEOUS.

14. Table iii gives statistics for recent years as to field experiments started and reaped, cane cuttings distributed, cane samples analysed, etc.

TABLE III.—**Statistics of Seedlings, Cane Distribution, Field Experiments, Cane and Soil Samples, Cane Sold and Visits Paid to Estates, 1943–1952.**

Year.	Seedlings Basketed.	Cane Cuttings Distributed.		Field Experiments.		Cane Samples.		Soil Samples Taken.	Cane Sold to Pln. Ogle.		No. of visits to Estates.
		No. of Cuttings.	No. of Bags.	Started.	Harvested.	No. Taken and analysed.	Cane Crushed (Tons).		Deliveries (Tons).	Net Receipts. $	
1943	8,951	524,810	4,037	19	78	819	16	159	1,352.85	3,525.65	211
1944	12,903	602,420	4,634	11	72	434	14	31	1,590.09	5,053.26	139
1945	6,043	578,240	4,448	98*	118†	605	14	95	1,461.02	6,812.25	173
1946	3,896	447,230	3,671	55*	111†	505	15	51	1,750.20	8,776.95	177
1947	—	172,900	1,380	27*	64†	403	15	18	2,153.37	9,542.47	211
1948	—	347,230	2,671	37	54	476	12	290††	2,232.05	9,892.36	162
1949	—	310,180	2,386	28	62	953	22	14†††	2,535.19	15,892.34	154
1950	—	105,720	1,762	18	65	719	24	—	3,135.25	20,080.18	154
1951	—	123,540	2,059	14	71	654	22	—	3,344.50	24,443.64	89
1952	—	174,420	2,907	32	62	1,102	30	—	2,794.20	22,274.61	80

1945 *Includes 64 Maize Micro-plot Experiments.
†Includes 53 „ „ „

1946 *Includes 30 „ „ „
†Includes 39 „ „ „

1947 *Includes 5 „ „ „
†Includes 5 „ „ „

1948 ††Includes 201 Sent to the I.C.T.A.

1949 †††Sent to Yale University.

15. Forty-four persons, including those connected with the Sugar Industry visited the Station during the year. Among these were Mr. C. G. Eastwood C.M.G. of the Colonial Office, London, and Professor A. B. Killick who headed a party of students from the Imperial College of Tropical Agriculture, Trinidad, B.W.I.

16. During the period under review close contact was maintained between the Industry and the Staff of the Sugar Station as shown by the fact that 80 visits were made to the several estates.

ACKNOWLEDGMENTS.

17. The cordial co-operation of the Staff of the Sugar Estates and of the Sugar Experiment Station is very gratefully acknowledged.

L. S. BIRKETT,
Sugar Agronomist

"LEAF SCALD" INVESTIGATION.

BY

J. S. ROBERTSON, B.Sc., Dip. Ag. Sci., D.T.A. (I.C.T.A.)

Plant Pathologist.

'Leaf Scald' continues to be of major importance on all sugar estates.

During the year outbreaks of the disease have been recorded on the following varieties B.37161, B.41227, B.4362 and D.62/43.

Of the existing commercial varieties, B.4098 is the only one resistant to the disease. There is no record of the disease having been found on this variety in the field.

Resistance Trials : Preliminary ratings of 27 breeding canes imported from Barbados have shown eight to be resistant and six to be tolerant as follows :—

Resistant : B.37254, B.4454, 28 N.G. 7, Dacca, Tobongo, Kloet, Pasoeroean and Local.

Tolerant : B.39250, B.39254, B.39274, B.41242, 32 M.Q. 579, Kavangire.

Observations on thirteen resistance trials planted at the Sugar Experiment Station and on five estates, using 143 potential commercial varieties, have shown :—

19 varieties failing to show external symptoms.

27 varieties to be Resistant.

34 varieties to be Tolerant.

The commercial possibilities of these varieties under local conditions have still to be tested.

The following experimental results should be recorded.

(i) It has been conclusively demonstrated (I) that rats are efficient natural vectors. Stools developed an 80% infection nine weeks after being exposed to rats which had been previously feeding on diseased canes.

(ii) It has also been shown (I) that infection does not take place by root contact, through the soil, or through undamaged buds.

(iii) An experiment (I) on growth suppression due to 'Leaf Scald' in the variety B.34104 which was conducted over a fifteen month period (plants and first ratoon) showed that there was a 50% suppression in growth as compared with the control.

(iv) Yield reduction trials, using susceptible varieties, continue to show weight reductions of 35% to 40%. The quality of the juice is also significantly decreased.

(v) It has been demonstrated (I) that the organism, in its physiological characteristics, closely resembles *Xanthomonas albilineans* (Ashby) Dowson.

Reference :

(I) Hutchinson, P.B. and Robertson, J.S. "Leaf Scald in British Guiana." A paper presented at the 8th Congress of I.S.S.C.T. (1953).